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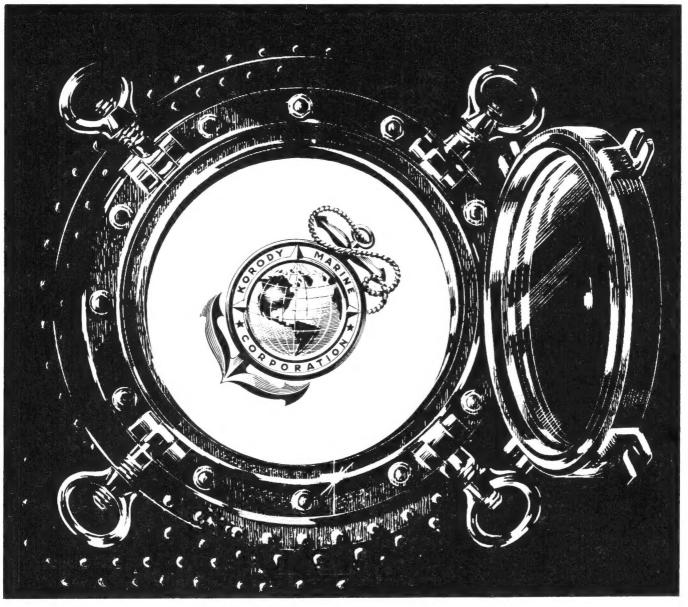
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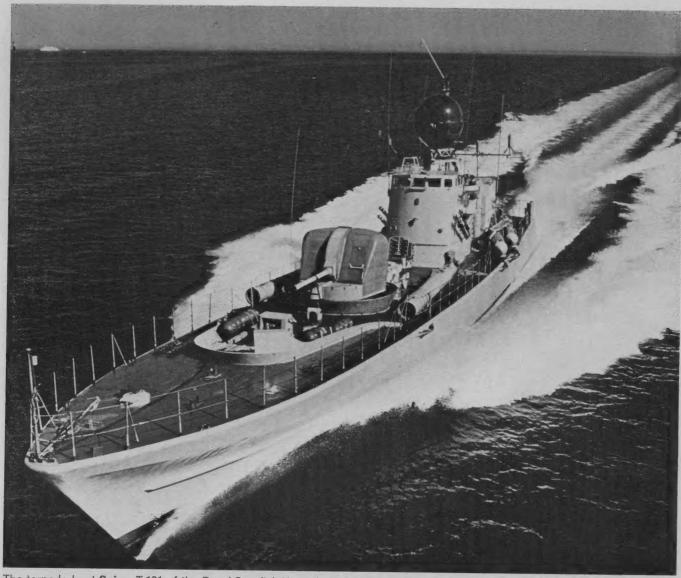
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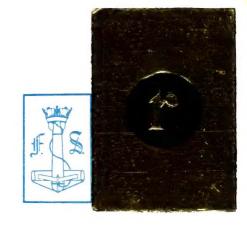
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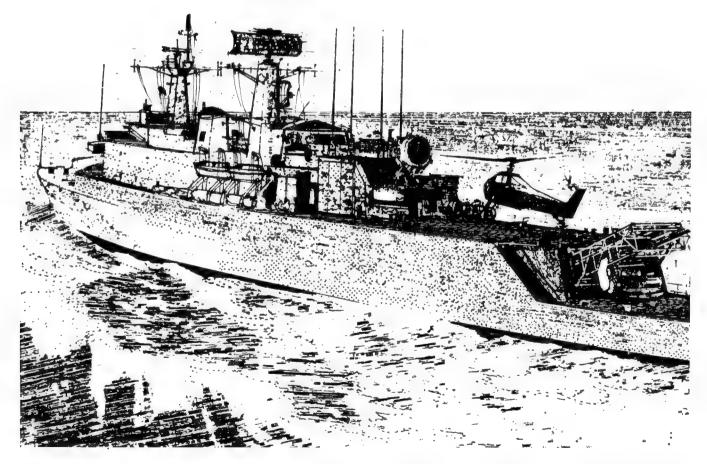
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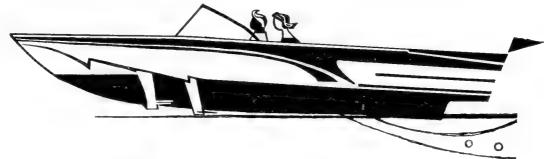
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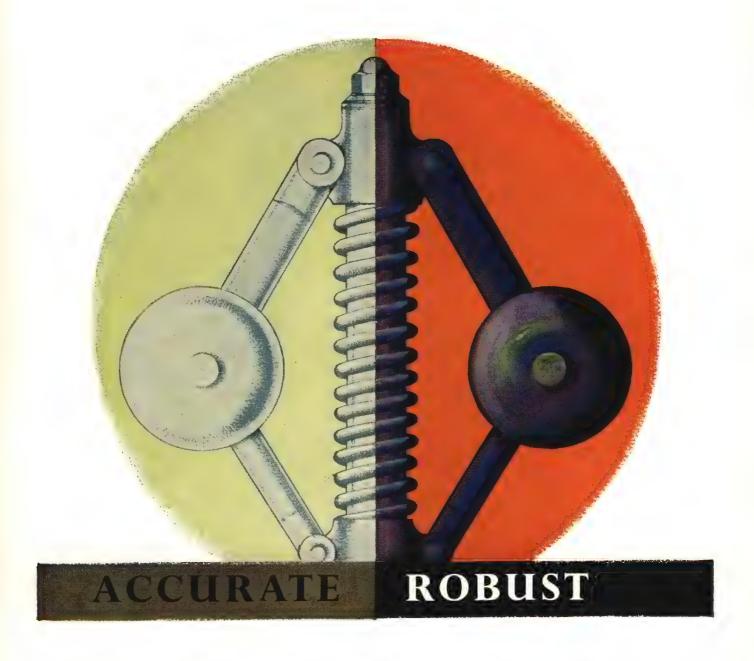


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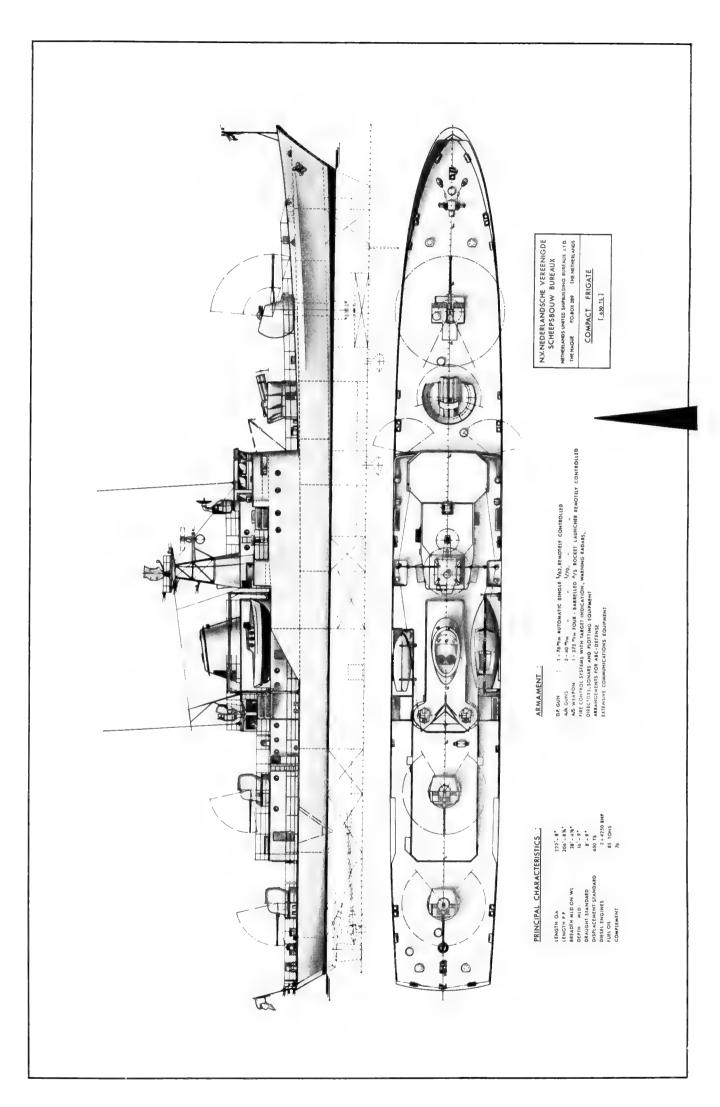
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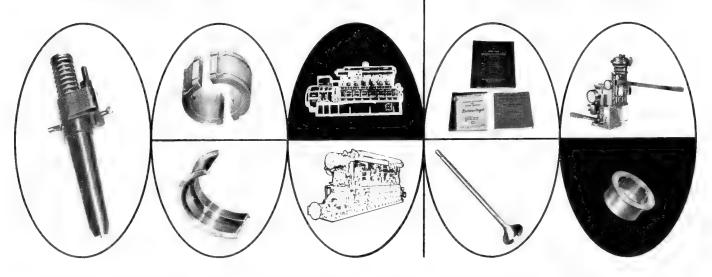
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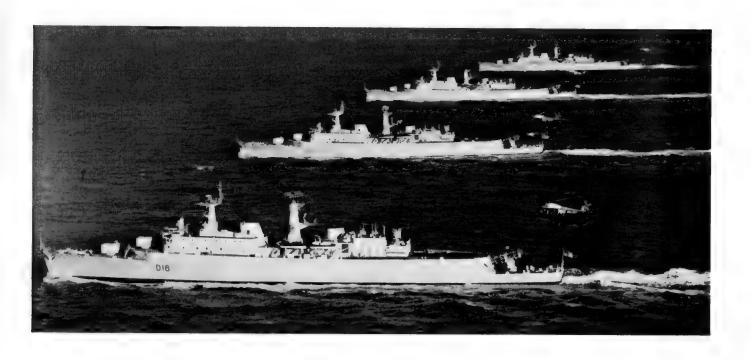
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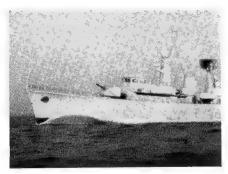
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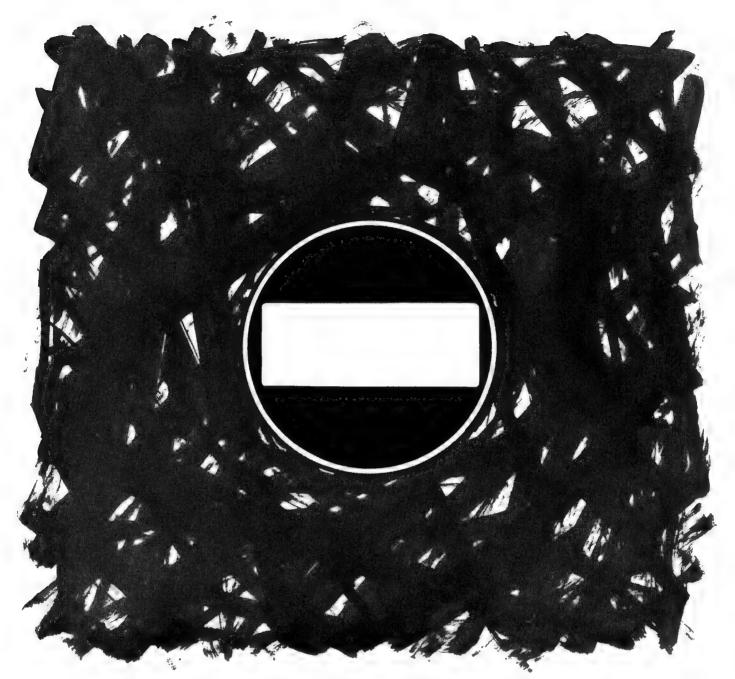
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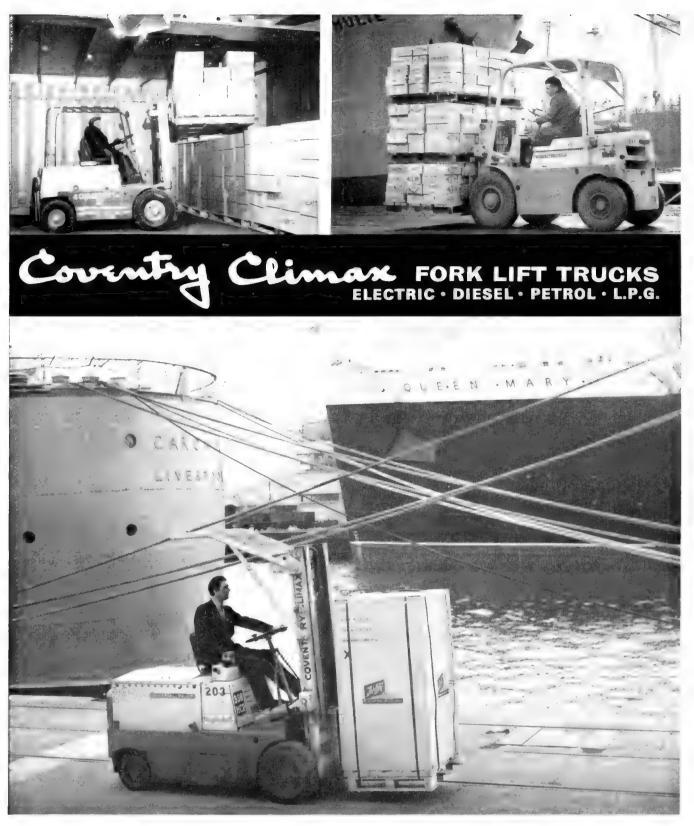
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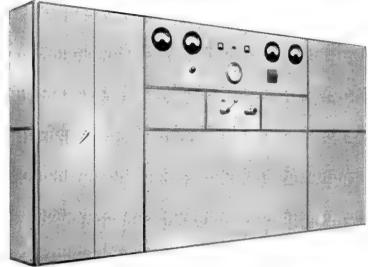
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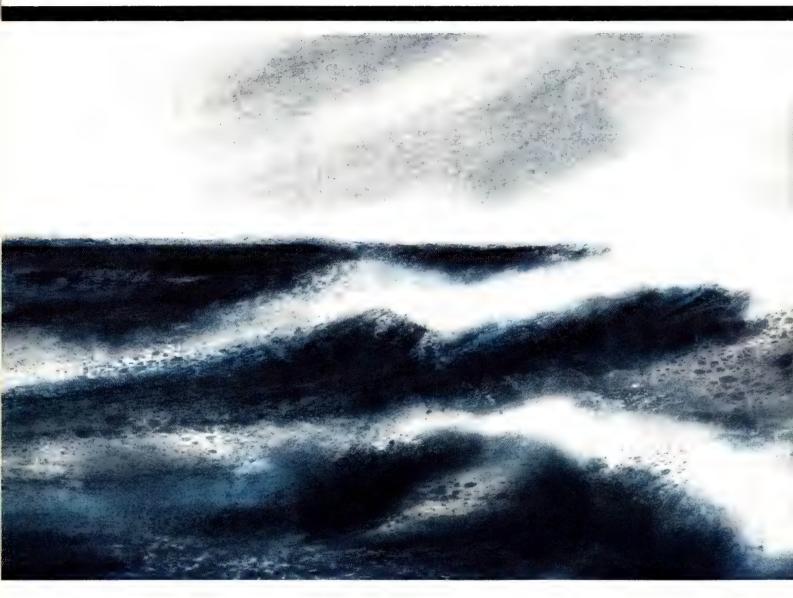
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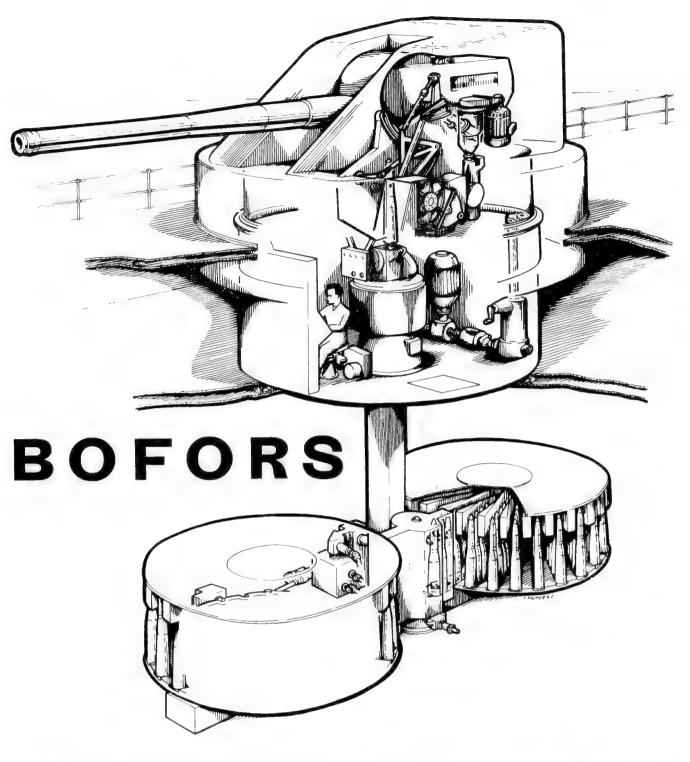


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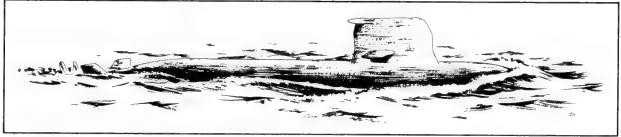
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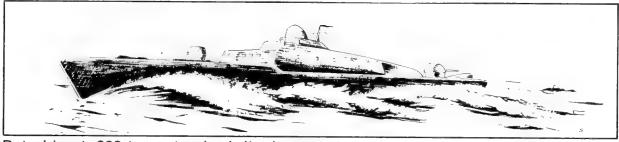
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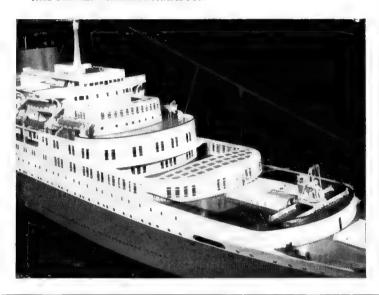


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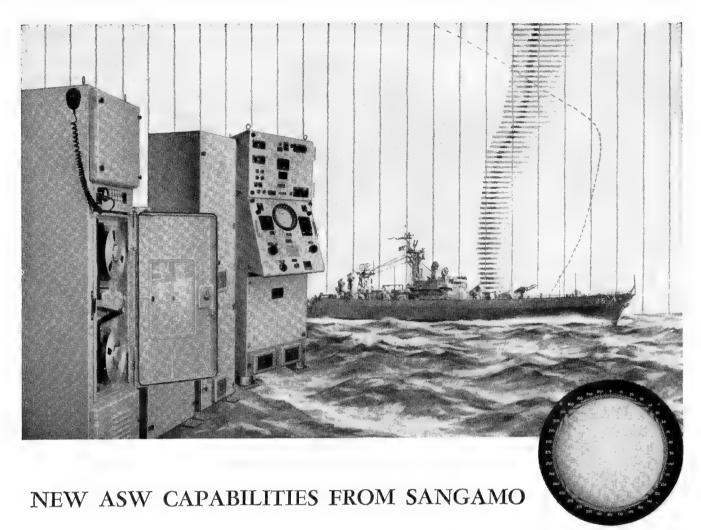
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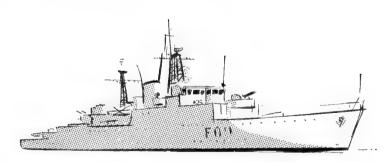
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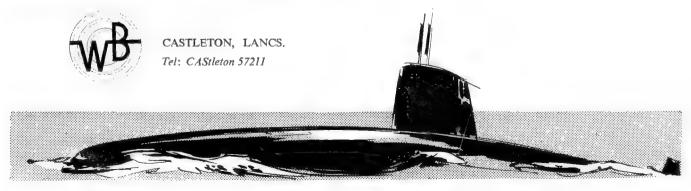
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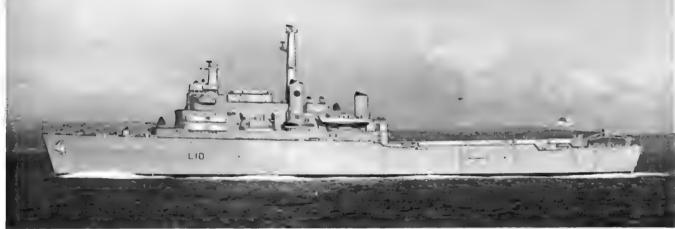
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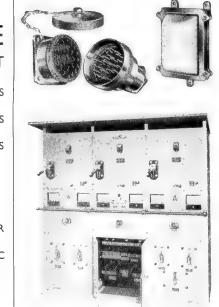
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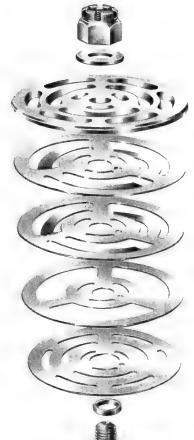
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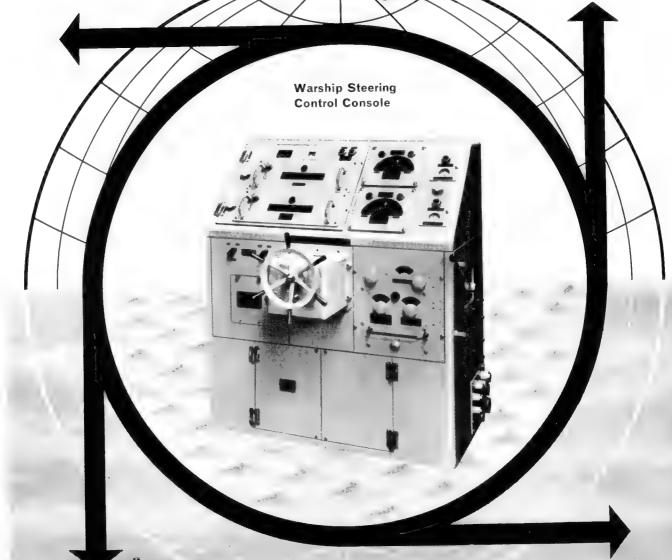


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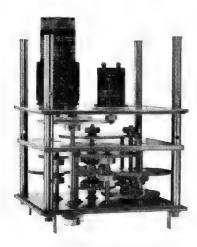
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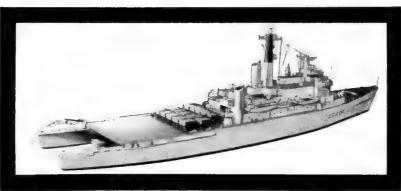
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FOREWORD

In this edition, the 69th year of issue of Jane's Fighting Ships, a new prominence has been given to submarines; and in the year when the first of the four British Polaris submarines of the "Resolution" class and the last of the 31 American Polaris submarines of the "Lafayette" class were launched, this issue might well be called a submarine edition.

Soon after the present editorship began in 1949 Jane's Fighting Ships gave a new order of precedence to aircraft carriers: they were promoted in front of battleships, despite the fact that they appeared after battleships in British and American official lists. That this was fully justified was borne out by subsequent events, for while battleships declined into obsolescence, were withdrawn from service and duly scrapped by all the major powers except the United States, which still has four laid up in reserve, aircraft carriers rose to new heights of power and importance, culminating in the great nuclear powered aircraft carrier Enterprise in the United States Navy and her huge conventionally powered half-sisters.

For the best part of a century the great fleets of battleships possessed by the principal naval powers constituted the deterrent, though that word was not then used as it is today. This prevailed until the span of the Great Wars when the power and range of the battleship was overtaken by the great carriers of man-guided weapons, in the shape of aircraft, delivering missiles far more effective.

Meantime submarines, however big they became, remained what they had been since the first effective military submarine was commissioned for naval service—a submersible torpedo boat. But with the harnessing of nuclear power within the confines of a tubular hull and the ability to dispense with air for the combustion of fuel, reactors taking the place of boilers for the exchange of heat, the underwater torpedo boats became true submarines. However, with their increase in diameter to house the nuclear propulsion plant and their consequent overall greater dimensions and displacement, with their more sophisticated navigation, guidance, control and diving equipment, and their new propensity for remaining submerged for months at a time, necessitating increased accommodation, better habitability and extra recreation facilities for the larger crew to operate and maintain a more complex combined engineering installation and fighting machine, nuclear powered submarines have become underwater cruisers.

The Polaris armed submarine is all that the nuclear powered torpedo vehicle is with the addition of a 128 feet long cylinder amidships for housing 16 ballistic missile tubes in two rows of eight abreast, and the resulting ships—and even the most pedantic submariner who has insisted on the hitherto correct term "boat" now concedes that she has become a "ship"—is now a vessel of many deck levels supporting a freight of the most devastating destructive power ever mounted in a warship. In the deterrent scheme she has become the battleship, and if she is not the capital ship of the fleet, for the aircraft carrier still holds sway there, she is certainly the capital ship of submarines.

In the British Navy it has been the official policy this year to discourage the term "attack" submarines to obviate possible confusion, among the not so well informed, between Polaris armed submarines and those armed only with torpedo tubes, and also to suppress the term "hunter killer" submarines. The Admiralty Board now prefers three categories, namely Polaris submarines, fleet submarines (nuclear powered); and patrol submarines (conventionally powered). On the other hand "attack" submarines is a recognised term in the United States Navy. The term "hunter-killer" submarine is also well-favoured in America.

In the broader sense, however, all submarines are "attack" warships, and submarines are more difficult to break down into separate categories, since all, whether Polaris armed,

nuclear powered or diesel driven are still in essence torpedo boats in conventional warfare.

In the order of categories in this edition submarines, which have hitherto followed after frigates, have been given precedence immediately after aircraft carriers and before cruisers, destroyers and frigates.

In this edition, too, more new photographs have been added than in any one year ever before. For many years past about one fifth of the illustrations have been renewed each year, so that, in general, no photographs have been more than five years old, but in this edition the turn over has been much more drastic, about half of the photographs having been renewed. Nearly 1,000 new illustrations have been added in this issue, including 60 scale drawings.

Altogether there are some 2,100 illustrations in the book, comprising over 1,700 photographs and nearly 400 scale drawings. Particulars are given of some 13,000 ships in the navies or sea defence forces of 98 countries. The strengths of the 55 of the largest of these are summarised at the end of the book in a two-page-spread table showing at a glance the number of warships of each category in each navy, and affording quick comparison between the maritime nations of the world.

Commensurate with the pictorial proliferation, a great volume of new facts and figures have been added to this edition. Throughout the book the technical ship data, reference tables and specialised notes have been extensively revised and in many cases liberally amplified in the light of new information received and to keep pace with the constantly changing naval scene. The amount of fresh material in this edition is well above the average.

During the past twelve months there has been a steady flow of information and photographs to this annual. With an abundant response from correspondents east and west, and with the co-operational and goodwill of all but a handful of the 101 naval and coastguard authorities concerned, this issue is able to give the latest pictorial and descriptive portraits of newly built warships, reconstructed vessels and converted units, and to maintain the Fighting Ships tradition, established in 1897, of presenting a comprehensive panorama of all the world's fighting ships, together with their support ships and auxiliaries.

This edition also provides a new look. Not only has most of the book been reset, with headings in bolder type, but, reversing the practice of many years whereby each page was headed by a large photograph, the layout has been so rearranged that the important data relating to each ship leaps to the eye at first glance. To this end, for each and every class of warships, names, in bold type, pennant numbers, building yards and construction dates have been concentrated in a compact table at the top adjacent to the technical ship data table, followed by the descriptive notes. photographs and drawings. The 468 pages of reference are still presented in alphabetical, categorical and chronological order, but the sweeping changes, together with the new prominence given to submarines, will doubtless add piquancy to the interest with which the readers of "Jane" peruse the pages of each new edition.

United States

In sharp contrast to the dejection in the Royal Navy following the cancellation by the new government of the construction of the long promised and much needed new aircraft carrier, there is great satisfaction in the United States Navy that a second nuclear powered aircraft carrier is to be built under the 1967 Fiscal Year New Construction Programme. A third and a fourth nuclear powered aircraft carriers are planned in future new construction programmes.

Discounting the five war-built "attack" aircraft carriers of the "Essex" class, which must inevitably be reduced to

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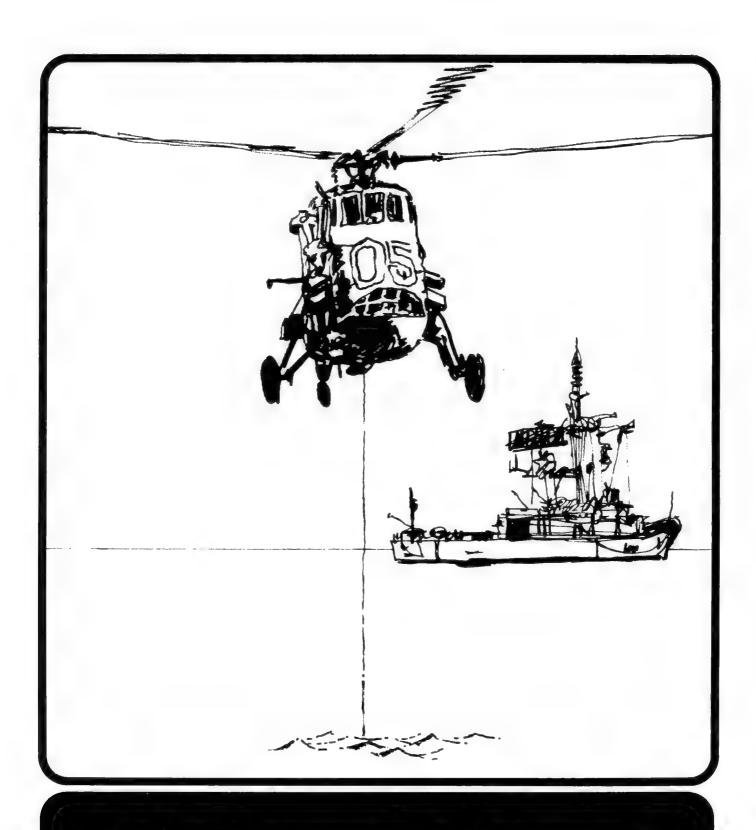
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"support" aircraft carriers in due course, the United States Navy already has eleven modern or rebuilt "attack" aircraft carriers of the largest size, namely the nuclear fuelled Enterprise, 75,700 tons standard displacement, the scarcely less powerful but conventionally fuelled America, Constellation, Forrestal, Independence, Kitty Hawk, Ranger and Saratoga, all 59,650 to 64,000 tons standard, and the Coral Sea, Franklin D. Roosevelt and Midway, 51,000 to 52,500 tons standard.

These existing aircraft carriers, together with the conventionally powered John F. Kennedy, 64,000 tons, already under construction, and the planned three nuclear powered giants of similar displacement, will bring the number of really large and modern "attack" aircraft carriers up to 15, which is considered to be the U.S. Navy's minimum operational requirement and which has been the target for the last ten years.

It took the United States only $3\frac{3}{4}$ years to build the nuclear powered aircraft carrier *Enterprise*, a notable achievement for the largest warship ever constructed. Assuming that the new nuclear powered aircraft carrier, which has been designed to endure for a life span of 25 years without refuelling, will be completed by 1970 and that the two sister ships planned will be completed by 1975, it is evident that the United States envisages a viable force of first line aircraft carriers right up to the end of the century.

It is also clear that the United States aims at nothing less than a nuclear powered fleet. Perhaps it is not generally realised how far the United States Navy has already progressed to achieving this, for existing nuclear powered warships already include an aircraft carrier, a cruiser, two frigates (destroyer leaders) and 70 submarines. It is intended that eventually there will be 150 warships with nuclear powered machinery and 200 warships armed with surface-to-air guided missiles, and all combatant ships will be armed with anti-submarine missiles or equipped with anti-submarine aircraft.

In the nuclear powered submarines field the United States Navy has already made, and is continuing to make, a prodigious effort. In 1966 the U.S.S. Will Rogers, the last of the 31 nuclear powered Polaris submarines of the "Lafayette" class, displacing 8,250 tons submerged, was launched. With the five nuclear powered Polaris submarines of the "Ethan Allen" class, 8,000 tons submerged, and the five nuclear powered Polaris submarines of the "George Washington" class, 6,700 tons submerged, all ten of which have been operational for several years, this means that all 41 of the planned deterrent vehicles, each incorporating 16 "Polaris" tubes, are now in the water, giving the United States a potential world saturation of no fewer than 656 ballistic missiles.

Eleven more of the planned 47 nuclear powered "attack" or "hunter-killer" submarines of the "Thresher" group (of the type now known in the British Navy as "fleet" or "cruiser" submarines) have been launched during the year, and six others completed. With the earlier units of the "Thresher" group, and the previous classes of nuclear powered submarines, the United States now has no fewer than 70 nuclear powered submarines completed or about to be commissioned at the turn of the year.

It is planned that by 1971 there will be 103 nuclear powered submarines, including the 41 deterrent submarines armed with ballistic missiles.

With new weapons and more sophisticated equipment the United States Navy is now more powerful than at any time since the end of the Second World War. The 3,400 units include 60 aircraft carriers, former aircraft carriers and ships of the aircraft carrier type, 207 submarines, 42 heavy ships of the battleship and cruiser categories, 35 frigates, or destroyer leaders, 670 vessels of the destroyer and escort types, 220 vessels of the minesweeping, minehunting and mine-laying categories, 37 craft of the various patrol types, 260 amphibious craft, 480 fleet auxiliaries and 1,390 service craft including the 270 ''swifts'' and other fast mosquito boats specially built in the last twelve months for the operations in Vietnam.

In connection with the latter the United States policy of placing ships surplus to immediate naval requirements in the custody of the Maritime Administration or National Defence Reserve Fleets has been fully justified, for under pressure of sudden expansion to meet the naval support requirements in the ostensibly primarily land and air campaign in Vietnam, many auxiliaries which had been stricken from the Navy List in recent years, have been reactivated and pressed into operational service. Vessels of purely mercantile type, including dozens of old "Victory" and "Liberty" ships built for the Second World War emergency which were never expected to put to sea again, have been resurrected from the laid up pools and mobilised for service as forward depot ships in the Pacific for Vietnam service or other ancillary purposes. Many amphibious vessels, support ships and tankers have been taken out of mothballs and recommissioned, and several combatant ships, which in the normal course of events would have been decommissioned, have been retained in service.

According to official figures at mid-year operational ships in the United States Navy totalled 1,549 (593 warships and 956 other naval vessels) comprising 902 in commission (410 warships, 140 amphibious vessels and 352 support ships) and 647 in reserve (183 warships and 464 other types including patrol vessels).

Throughout this decade the United States Navy has promulgated a substantial shipbuilding and conversion programme each year, and the 1967 Fiscal Year Programme is hardly less impressive than in former years. New construction includes a nuclear powered attack aircraft carrier, five nuclear powered submarines, ten escort ships (of the new large type, almost as big as the light cruisers of former days), a dock landing ship (of much the same type as the new British assault ship Fearless), eleven tank landing ships (much bigger than hitherto built), six ocean minesweepers, and twelve support and auxiliary ships of various types. The Conversion Programme includes a guided missile cruiser, five frigates (destroyer leaders), five destroyers, and two military sea transportation service tankers.

It is nine years since a nuclear powered aircraft carrier was authorised in a new construction programme. The United States Navy has consistently advocated the construction of a second over the intervening years, but has been frustrated by more than one intractable Defense Secretary. It would seem that the war in Vietnam has turned the scales. A great aircraft carrier in the offing, with unlimited cruising range and quite independent because she has no need to refuel, probably pointed the lesson to the powers that be that a nuclear powered ship has one massive advantage over an oil-fired vessel. The next step is not difficult to forecast. Aircraft carriers are the king-pins of task forces, and if the king-pin is nuclear powered it can justifiably be argued that other units of the task force, cruisers, frigates, and destroyers, should be nuclear powered too. In a short generation the United States could have a nuclear powered fleet.

U.S.S.R

The size of a nation's mercantile marine is the measure of her maritime interest and of necessity the might of her fighting navy. This has always been so, but particularly applicable now to the Soviet Union, whose merchant fleet of over 2,000 ships, aggregating 9,500,000 tons gross, is twice as big numerically and four times the size in capacity as it was only a decade ago, and is now the sixth largest in the world. The U.S.S.R. is now not only a naval power (second only to the United States), an air power, a military power, a nuclear power and a space power, but a commercial power by virtue of her merchant ships and ocean trade routes.

This great new merchant fleet has all the necessary naval backing in the shape of ubiquitous fleets built up over the last 20 years to a peak of professionalism and efficiency. But even this is not the sum of the Soviet Union's maritime strength, for there are also a fleet of survey ships, a fleet of research ships, a fleet of fishing vessels, and the better known fleet of intelligence trawlers which keep watch and ward over the naval activities of all the other maritime

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nations of the world, particularly the United States and the United Kingdom.

The Soviet Navy is now blatantly flaunting its numerical and intrinsic strength for all to see, and playing it as on the chequered board. Soviet warships have come to be expected as an occupational hazard during all national and international naval exercises. The Soviet naval war game is now a global fact of life. Where the British Navy held sway for a hundred years the U.S.S.R. now has a powerful permanent fleet in the Mediterranean for the first time in her history. But this is only one fleet: there are others in the Pacific, the Atlantic, in African waters, to the east and the west, and in northern waters.

Wherever there is a demonstrably strategic sphere, wherever there is an obvious tactical area and another nation's raison d'etre for being there, there also is the Soviet Navy. Wherever there is navigable water the Soviet Navy has warships or para-military ships, and any operation carried out by other navies is their shadow exercise too. A large proportion of the ocean-ranging Soviet Fleet consists of submarines—nuclear, missile and conventional.

The Soviet Union has not suddenly come to realise the value of sea-power, because it has been progressively building up the fleet for 20 years, but the time has now come when it can exploit the oceans to the full, matching submarines, cruisers, destroyers, escorts, support ships, minesweepers, guided missile patrol boats, oilers, store carriers, and electronic surveillance scouts with anything that the other major naval powers can produce. Its naval forces are now deployed on a world-wide scale, and are capable of exerting a strong maritime influence on world affairs.

For several years past the Soviet Navy has been turning out almost at a set annual pace a new type in each of the submarine, destroyer, escort and minesweeper categories, and this year has been no exception, but it is becoming increasingly difficult to keep track of new warships or to accurately assess the numbers of units in each class, since the Soviet Navy seems to make a practice of changing the hull markings so that one ship can bear different numbers on different occasions.

The Soviet Navy is now estimated to include 40 nuclear powered submarines, 340 conventionally powered submarines, 20 cruisers, 110 destroyers, 100 escorts, 300 coastal escorts, 300 minesweepers, 100 missile patrol boats, 350 motor torpedo boats, and 200 landing craft. It is difficult to give an accurate figure for auxiliaries and service craft, as they run into thousands, and many mercantile vessels are used for ancillary purposes and constitute para-military support.

United Kingdom

Probably never before in the history of the Royal Navy has there been so much ill-informed comment as during the past twelve months about the need for new aircraft carriers. Confusion has reigned in Government no less than in lay circles.

In the Defence Estimates 1966-67, Part II, page 27, Paragraph 21, published on 22 February 1966 it was stated:— "The aircraft carrier is the most important element of the Fleet for offensive action against an enemy at sea or ashore and makes a large contribution to the defence of our seaborne forces. It can also play an important part in operations where local air superiority has to be gained and maintained and offensive support of ground forces is required".

At the same time it was stated that the construction of the long projected new aircraft carrier, CVA 01, of about 50,000 tons displacement, approval to build which was officially announced on 30 July 1963, had been cancelled.

Almost all that can be said for or against aircraft carriers has been said elsewhere, and although this annual aspires to record the traits of the past year and to point the trends of the future it would be tedious to repeat even the more germane of the arguments here.

But the Royal Navy believes that carrier-borne aircraft can do or could do anything that land-based planes can do,

and from a more secure mobile base, anonymous in the vastness of the ocean, instead of from a static air-strip of fixed geographical location, pin-pointed on the map and known to any enemy, sorties from which must always be subject to political vagaries, dictatorial embargoes, and the possible denial of overflying rights engendered by the upsurge of nationalism and independence all over the world. It is a brave dictator who would stage a putsch when he suspected there was an aircraft carrier in the offing but knew not where or how far away it was or from which direction its aircraft would come.

The Royal Navy believes there is a requirement for the Fleet Air Arm for the next two decades. It believes that the aircraft is just as much a vital weapon in the naval armoury as the gun, the torpedo, the guided missile and the depth charge.

It is clear, from the lessons pointed by the several simultaneous conflicts in South-East Asia, that in spite of all that has been said about the phasing out of aircraft carriers provision will have to be made for the Fleet Air Arm for many years to come. Judging by Victorious, the life of which has already been extended to 25 years by reconstruction and modernisation, and is likely to last until she is 30 years old, the lives of Hermes, Ark Royal, Centaur and Eagle' could be extended until 1989, 1985, 1983 and 1981, respectively. Eagle recently underwent a 4½ year reconstruction, Hermes recently emerged from a two-year refit, and Ark Royal is in hand for a three-year reconstruction, so these three at least will soldier on into the 1980s. But is it fair that a whole generation of naval aviators should have to "make-do-and-mend" with aircraft carriers darned until there is no sock left instead of being encouraged into the efficiency and esprit de corps which would be engendered by the building and operation of at least one aircraft carrier designed with the requirements of the 1970s and 1980s in mind and incorporating all the improvements of which British naval constructors and scientists are capable?

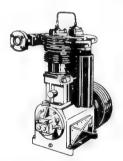
While the Fleet Air Arm has every justification for despondency, the Submarine Service is elated, for numerically, in the number of ships, and probably technically, too, it is the strongest arm of the Royal Navy. The year has seen several notable landmarks. The first of the four Polaris armed nuclear powered submarines, H.M.S. Resolution, was launched, the second of the five nuclear powered fleet submarines, H.M.S. Valiant, was commissioned, and the last of the thirteen conventionally powered patrol submarines of the "Oberon" class was launched.

The launch of Resolution heralds a new epoch, and it is a pity that in a Britain choked with domestic politics and economics it has not received the attention it deserves. The Polaris submarine is a really great development which with the present and foreseeable limitations of sonar detection is practically impervious to hostile action in preventing the ballistic missiles being laid with great precision and maximum effect. Its invulnerability, combined with its potential destructive ability, gives the country possessing it immense power and to a large extent compensates for any inevitable insufficiency of conventional forces.

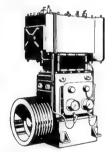
Theoretically Britain's four Polaris submarines would enable 64 intercontinental strike missiles to be deployed under a cloak of total invisibility and anonymity, and it could be argued that this is just as much a deterrent as America's 656 missiles mounted in 41 submarines. But the deterrent effect also depends on the number of Polaris vehicles which can be deployed at any one time, and while there is every probability that at least a dozen of America's Polaris submarines will always be operational and on station all the time it is very doubtful if more than one, and only stringently two, of a total of four British Polaris submarines, could be guaranteed to be in underwater "orbit" times owing to the physical limitations of both materiel and personnel. The deterrent is only completely effective if a number of Polaris submarines are on station simultaneously for the threat is then multi-directional and universal. It is a pity that the intention to build a fifth Polaris submarine was rescinded on the change of Govern-

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ment, for this would have ensured two, and possibly three, deterrent submarines being operational at all times.

The battle fleet of former days was the guarantee of Britain's security. Its deterrent successor will be the Royal Navy's force of Polaris submarines, but to be minimally effective it must comprise sufficient units to enable more than one to be employed in the role for which they were intended and to justify the building of any of them.

Hardly less valuable, outside the deterrent scheme, are the nuclear powered fleet submarines, of which Dreadnought was the prototype and Valiant is the first of the "production" class, to be followed by Warspite, already launched, Churchill and another ordered. These vessels are able to range the oceans with almost unlimited endurance, to steam over immense distances, to attack or shadow surface ships or other submarines as opportunity offers, to escort convoys, to keep up with the speed of the fleet, to act independently at all times without the necessity of refuelling, and to disappear from sight at will. These cruiser submarines, indicative of a more rapid progress in the evolution of the submarine, presage a new era of underwater big ship warfare.

As regards new surface ships for the Royal Navy, the only radical departure from the continued construction of well-proven types is the ordering of the first "Type 82" guided missile armed destroyer powered by combined steam and gas turbine machinery, a vehicle for the new "Seadart" medium range ship-to-air system and the "Ikara" anti-submarine weapon.

The fifth and sixth guided missile armed destroyers of the "County" class, Fife and Glamorgan, carrying the "Seaslug II" system, were completed during the year, and two sister ships, Antrim and Norfolk, were laid down.

Also during the past twelve months construction of the very successful general purpose frigates of the "Leander" class has proceeded apace, four more having been completed, three more launched, another three laid down, and a further three ordered, bringing the number in this class up to 22 units, the numerically largest class of frigates of a single design built since the Second World War.

H.M.S. Fearless, the Royal Navy's first assault ship, which entered service early in the year, and her sister ship Intrepid, being completed, are the most versatile ships yet designed for combined operations. The novel helicopter support ship Engadine was launched and the minelayer Abdiel laid down. The depot ship Forth completed her four-year conversion into a nuclear powered submarine support ship. The second cruiser, Lion, was taken in hand for conversion into a helicopter carrier like her sister Blake, now in an advanced stage of transformation.

France

Perusal of the French section will show that the republic is by no means being left behind as a naval power. Considerable progress has been made both in the nuclear field and in the production of conventional weapons, and the well-balanced French Fleet now stands at its post-war best, with a fair measure of sufficiency in all categories of warships and auxiliaries. The new guided missile frigates of the "Suffren" class are of particularly striking design, and the new missile submarine Gymnote also has a novel configuration.

Italy

The ship designers in Italy are showing an individualistic bent away from the orthodox in the shape of novel guided missile cruisers, new destroyers, improved frigates and distinctive corvettes. A new fast replenishment ship is projected which, depending on the supply of enriched uranium from the U.S.A., may be nuclear powered.

Germany

The "Hamburg" class of four large orthodox destroyers have been completed, and Germany is turning to a guided missile type, the first three units of which are being built in

the U.S.A. on the basic design of the "Charles F. Adams" class. New construction will bring the post-war U-boat flotilla up to 30 units.

Japan

Commensurate with the remarkable resurgence in merchant shipbuilding, Japan continues the build-up of the defence fleet. The five-year plan is well on the way to completion, and post-war construction will include eleven submarines, 26 destroyers, seven frigates, 20 patrol vessels and 24 minesweepers.

Fighting Ships is much indebted to the Naval Boards, Navy Departments and Ministries of Marine and Defence who furnished information and photographs. This was facilitated by the kindness of the Ambassadors and Naval Attaches in London, including: Rear-Admiral M. A. Noel, French Navy; Rear-Admiral Enrique Carbonel C., Peruvian Navy; Rear-Admiral J. W. O'Grady, United States Navy; Commodore Ulf Reinius, Royal Swedish Navy, Brigadier-General M. Goren, Israeli Embassy; Brigadier J. P. Verster, S.M., S.A.A.F., South African Embassy; Captain Julio A. Acuña, Argentine Navy; Captain A. A. de Malafaia, Brazilian Navy; Captain P. Carvajal, Chilean Navy; Captain H. Nörgaard, Royal Danish Navy; Captain J. E. T. Helenius, Finnish Navy; Captain E. G. Kray, Federal German Navy; Captain S. Mourikis, Royal Hellenic Navy; Captain V. Patrelli Campagnano, Italian Navy; Captain Goro Yoshimura, Japanese Embassy; Captain H. A. van Oorde, Royal Netherlands Navy; Captain J. R. Gonzalez, Spanish Navy; Captain P. Choon-Ngarm, Royal Thai Navy; Captain K. Sevindik, Turkish Navy; Colonel J. F. Biot, Belgian Embassy; Colonel O. T. Mehn-Andersen, Royal Norwegian Embassy; Colonel Branko Kobali, Yugoslav Embassy; Commander L. A. G. Cardoso, Portuguese Navy.

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M. Henri le Masson, Editor of "Flottes de Combat"; Herr Alexander Bredt, Editor of "Weyers Flottentaschenbuch"; Vice-Admiral Vittorio Prato, Editor of "Rivista Marittima"; Captain Allan Kull, Editor of "Marinkalender";

Dr. Luigi Accorsi; Rear-Admiral M. J. Adam, C.V.O., C.B.E..; Professor Alfredo Aguilera; Dr. Giorgio Arra; Mr. William H. Davis; Major Aldo Fraccaroli; Dr. Giorgio Giorgerini; Mr. Hajime Fukaya; Constructor Lt.-Commander Shizuo Fukui; Commander Alvin H. Grobmeier; Captain T. D. Manning, C.B.E., V.R.D., R.N.V.R.; Ing. Augusto Nani; Mr. C. W. E. Richardson; Mr. John S. Rowe; Captain Aluino Martins da Silva; Captain R. Steen Steensen, R.D.N.; Herr Stefen Terzibaschitsch; Mr. Godfrey H. Walker; and many others who prefer to remain anonymous.

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Raymond V. B. Blackman.

Maybach

MD 1082

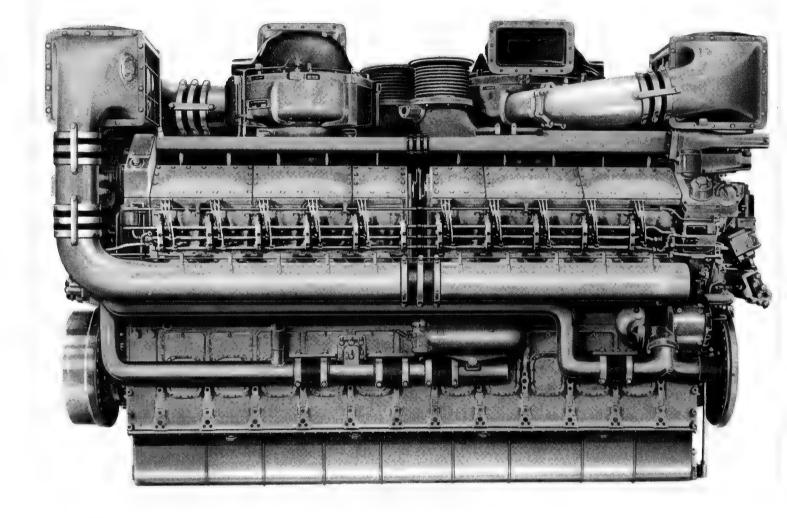
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ALBANIA

SUBMARINES

4 Ex-U.S.S.R. "W" Class

Displacement: Dimensions: Machinery:

1,030 tons surface, 1,180 tons submerged 240×22×15 feet

6-21 inch
Diesels. B.H.P.: 4,000=17 kts. surface
Electric motors. H.P.: 2,500=15 kts. submerged

Four "W" class submarines are reported to have been transferred from the U.S.S.R. For full particulars and photographs see U.S.S.R. section.

FLEET MINESWEEPERS

2 "T 43" Class

Displacement: Dimensions:

500 tons standard (600 tons full load) 200×27½×9 feet 4—37 mm. AA., 8—13 mm. M.G. AA Diesels. 2 shafts. Speed=18 kts.

"T 43" class fleet minesweepers acquired from the U.S.S.R. in 1960.

M.G. AA.



"T 43" Class

Ex-U.S.S.R.

PATROL VESSELS

4 Ex-U.S.S.R. "Kronstadt" Class

502

504

Displacement: Dimension:

300 tons standard (350 tons full load)
167½×19½×9 feet
1—3.9 inch, 2—37 mm. AA., 3—20 mm. AA.
Depth charge projectors
Diesels. 2 shafts=27 kts.

Guns:
A/S weapons:
Machinery:

"Krondstadt" class submarine chasers. Fitted for minelaying. Four were transferred in 1958, but two of these were exchanged for newer versions in 1960.



"KRONSTADT" Class

Ex-U.S.S.R

MOTOR TORPEDO BOATS

14 Ex-U.S.S.R. "P-A" Class

Displacement: Dimension:

Guns:

Tubes:

50 tons 85½×20×6 feet 4—25 mm. AA, M,G 2—18 inch

Diesels. B.H.P.: 2,000=42 kts.

Soviet built fast patrol boats acquired in 1955. It is reported that there are motor torpedo boats in the Albanian Navy including six Soviet P-A class.



"P.A" Class

Ex-U S.S.R.

INSHORE MINESWEEPERS

6 Ex-U.S.S.R. "T 301" Class

Displacement: Dimension: Guns:

Machinery:

130 tons standard (180 tons full load) $100\times16\times4\frac{1}{2}$ feet 2—37 mm. AA., 2—25 mm. AA. Diesels. 2 shafts. B.H.P.; 480=10 kts.

"T 301" class inshore minesweepers acquired from the U.S.S.R. in 1957-60. nother photograph of "T 301" class appears in the 1962-63 edition. Another photograph of



"T 301" Class

Ex-U.S.S.R.

Ex-PASMAN (ex-Mosor)

Ex-UGLIANO (ex-Marian)

Displacement: Dimension:

Guns: Machinery:

125 tons standard (130 tons full load)
98½×26½×5½ feet
1—47 mm.
Triple expansion, 2 shafts, I.H.P.: 280=9 kts.

Former Yugoslavian mining tenders and inshore minesweepers launched in 1931 at Yarrow's Adriatic Yard, Kralyevica. Later used as small minelayers, but their employment in this role is now doubtful. A photograph of ex-Ugilano (ex-Marjan) appears in the 1962-63 edition.

MINESWEEPING BOATS

3 Ex-U.S.S.R. "KM 4" Class

Displacement: Dimension:

20 tons 2—13 mm. AA. M.G.

Machinery: Speed=32 kts.

In addition to the above there are reported to be 16 small coastal patrol craft.

DEGAUSSING SHIP

Dimensions:

 $134 \times 40 \times 14$ (max.) feet

Reported to have been transferred from the U.S.S.R. Built in Finland in 1956.

DEPOT SHIP

Displacements

Measurements: Dimension:

3,500 tons standard
3,258 tons gross, 4,500 tons deadweight
336×47×19 (max.) feet
Triple expansion I.H.P.: 2,450=13 kts. Machinery:

"Atrek" class submarine tender reported transferred from U.S.S.R. in 1961.

OILER

NDALDHUT DAINANI

Measurements: Machinery:

1,600 tons deadweight 220×33×15 (max.) feet 2 diesels. B.H.P.: 1,600=12 kts.

Reported to be Soviet built, Launched in 1956.

ALGERIA

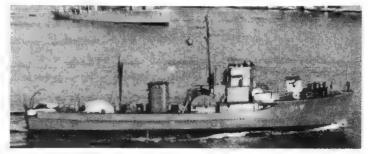
COASTAL MINESWEEPER

SIDI FRADJ (ex-Darfour)

Displacement: Dimension:

215 tors standard (270 tons full load) 136 (o.a.) $\times 24 \pm \times 6$ feet 1—3 inch, 2—20 mm. AA. Diesels. B.H.P.: 1,000=13 kts,

Two ex-U.S. BYMS type coastal minesweepers were presented to Algeria by Egypt to form the nucleus of the new Algerian Navy. Both Darfour (ex-BYMS 2041) and Tor (ex-BYMS 2175) arrived in Algiers on 4 Nov. 1962, being officially handed over on 6 Nov. and renamed Sidi Fradj and Djebel Aures, respectively, but the latter was wrecked off Algiers in Apr. 1963



SIDI FRADJ

Ex-U.A.R.

It is reported that there are also eight motor torpedo boats (2 ex-Egyptian d 6 ex-Soviet, see bottom of col. 1), and an ex-Soviet trawler of the and 6 ex-Soviet, see "Sekstan" type. type.

ARGENTINA

Administration

Secretary of Marine:
Vicealmirante Manuel A. Pita.

Chief of Naval Operations: Almirante Benigno I. M. Varela

Commander-in-Chief, Sea-going Fleet: Contraalmirante Jorge Alberto Boffi. Chief of Naval Commission in Europe and Naval Attaché in London: Captain Julio A. Acuña

Naval Attaché in Washington: Contraalmirante Pedro A. J. Gnavi.

1966: 2,300 officers, 31,000 ratings (including 15,000 conscripts).

The names of all Argentine warships and naval auxiliary vessels are prefaced by "A.R.A." (Armada Republica Argentina).

Mercantile Marine

Lloyd's Register of Shipping: 323 vessels of 1,288,656 tons gross

Silhouettes

Scale: 150 feet=1 inch







LA ARGENTINA (catapult now removed)



BROWN, ESPORA, ROSALES



BUENOS AIRES Class



SARANDI



KING, MURATURE



AZOPARDO, PIEDRABUENA



COMODORO AUGUSTO LASSERE



REPUBLICA

AIRCRAFT CARRIER (Portaviones)

I Ex-British Type ("Colossus" Class)

Deck No.:

V 1 (formerly letter]) Harland & Wolff, Ltd., 12 Dec. 1942

Belfast Launched: Completed: 20 May 1944 24 Jan. 1946 INDEPENDENCIA (ex-H.M.S, Warrior)

14,000 tons standard, 18,400 tons normal (19,540 tons full load) Displacement:

load)
Length: 630 (pp.), 695 (o.d.)
feet. Beam: 80 feet. Width: 118
(o.d.) feet. Draught: 21½
(mean), 23½ (max.) feet. Flight
deck: 690 feet long, 80 feet
wide, 39 feet above water line
8—40 mm. Bofors AA. Dimensions:

Aircraft: Machinery:

8—40 mm. Bofors AA.
21 capacity
Parsons geared turbines. 2 shafts
S.H.P.: 40,000=25 kts. (24.25 kts. sea speed)
4 Admiralty, 3-drum type (400 lb. working pressure, 700 degrees maximum superheat)
3.200 tons Boilers:

Oil fuel: 3,200 tons 12,000 miles at 14 kts., 6,200 miles at 23 kts. 1,076 (peace), 1,300 (war) Radius:

Complement:

General

Guns:

General
Lent to the Royal Canadian Navy from 1946 to 1948. Served in the British Navy from 1948 to 1958. Modern-Ised in 1952-53 with lattice foremast and extended and enlarged bridgework. Again modernised in 1955-56 with the partially angled flight deck and improved arrester gear. Acted as headquarters ship in the Christmas Island Atomic experiments from Feb. to Oct. 1957. Negotiations for the sale of the ship to the Argentine Government were concluded by the British Government in July 1958. Sailed from Portsmouth to Argentina on 10 Dec. 1958. Renamed independencia at Puerto Belgrano naval base on 26 Jan. 1959.
Insulated for tropical service and partially air-conditioned.

ditioned.

Engineering
Engines and bollers are arranged en enchelon, the two propelling machinery spaces having one set of turbines and two boilers installed side by side in each space, on the unit system, so that the starboard propeller shaft is longer than the port shaft. Maximum speed is 25 knots at 225 revolutions per minute. Economical speed is 15 knots at 210 revolutions per minute. knots at 120 revolutions per minute.

Dimensions of hangar are: Length, 445 feet; width, 52 feet; clear depth, $17\frac{1}{2}$ feet. Dimensions of aircraft lifts are: 45 feet by 34 feet.

Drawing
Port elevation and plan, Redrawn in 1965, Scale:
128 feet=1 inch.



INDEPENDENCIA

1966, Argentine Navy, Official

Construction

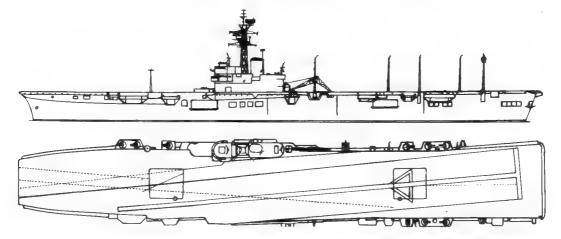
Construction
Flight deck is reported to have been strengthened to take aircraft of over 8 tons in weight, Sponsons can be dismantled to the extent of 3½ feet on either side if recessary to allow for passege through Panama Canal. Mercantile type hull, Built to Lloyd's specification up to main deck with the original intention of converting to commercial service after the Second World War. Damage control: No great measure of vertical sub-division on the sandwich system as it was reckoned that it is better for ships to settle evenly in the event of damage and flooding than to foster capsizing.

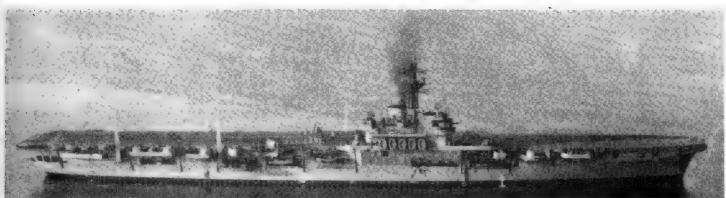
Operational

Ten arrester wires to take 15,500 lb. aircraft up to 60 knots. Single track catapult for launching 20,000 lb. aircraft at 60 knots. Catapult accelerator gear port side forward. Flight deck originally designed for 14,000 lb. aircraft reinforced to take 20,000 lb. machines. Photographs

Photographs

A port surface view appears in the 1957-58 to 1963-64 editions and a port bow oblique aerial view in the 1959-60 to 1963-64 editions, and a starboard bow oblique aerial view in the 1964-65 and 1965-66 editions.





INDEPENDENCIA

1964, Argentine Navy, Official

SUBMARINES

2 Ex-U.S. "Balao" Class

Displacement:

1,526 tons standard, 1,816 tons surface (2,425 tons submerged) $311\frac{1}{2}\times27\times17$ feet 10-21 inch (6 bow, 4 stern), 24 torpedoes Mk. 14 G.M. 2 stroke diesels B.H.P.: 6,500=20 kts. (surface). Electric motors, H.P.: 4,610=10 kts. (submerged) 300 tons 12,000 miles at 10 kts.

Dimensions:

Tubes:

Machinery:

Oil fuel: Radius:

Complement:

12,000 miles at 10 kts.

General

General
Former United States submarines of the "Balao" class. Lamprey was transferred from the U.S.A. to Argentina at Mare Island Naval Shipyard, San Francisco, on 21 July 1960, and Macabl in Sep. 1960, after having been refitted. Both were built by the Maritowoc Shipbuilding Company. Have two engine rooms instead of one to reduce size of compartments. Photographs
A photograph of Santiago del Estero appears in the 1962-63 to 1964-65 editions.

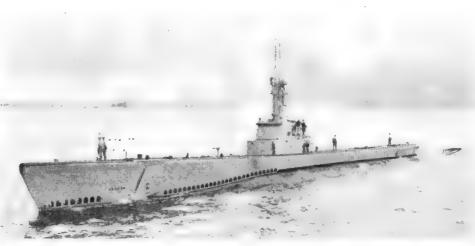
Disposals

The old submarines Salta and Santiago del Estero were withdrawn from service and deleted from list, it was officially stated in May 1960. Their sister ship Sante Fe was officially removed from the list in 1957.

SANTA FE (ex-U.S.S. Lamprey, SS 372) SANTIAGO DE ESTERO (ex-U.S.S. Macabi, SS 375)

Pennant No. S 11 S 12

Launched 18 June 1944 19 Sep. 1944 Completed 17 Nov. 1944 29 Mar. 1945



Laid down: 15 Apr. 1935 1 Apr. 1935

SANTA FE

1965, Argentine Navy, Official

Launched:

12 Mar. 1938 3 Dec. 1936

Completed: 8 Mar. 1939 1 Feb. 1939

CRUISERS

Builders: New York S.B. Corp. Camden Newport News S.B. & D.D. Co.

2 "9 de Julio" Class

GENERAL BELGRANO(ex-17 de Octubre, ex-Phoenix) NUEVE DE JULIO (ex-Boise)

Displacement:

General Belgrano: 10,800 tons standard, 12,650 tons normal (13,645 tons full load)

Dimensions:

(13,645 tons full load)
Nueve de Julio: 10,500 tons
standard, 12,300 tons nomal
(13,645 tons full load)
Lenght: 608 | (o.a.) feet Beam:
69 feet. Draught: 24 feet (max).
15—6 nch. 47 cal: 8—5 inch,
25 cal: 28—40 mm. AA.: 16—
20 mm. AA.: 4—47 mm. saluting
2 helicopters

Aircraft:

Guns:

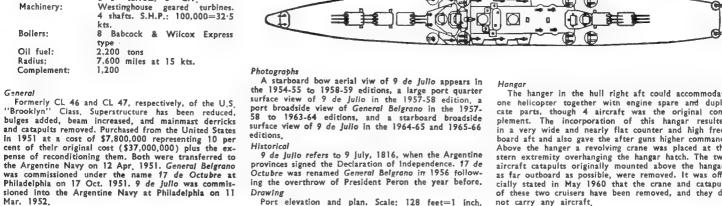
20 mm. AA.: 4—47 mm. saluting 2 helicopters 4".1\frac{1}{2}" belt. 3"+2\frac{1}{2}" decks. 5"-3\frac{3}{2}" turrets, 8" C.T. Westinghouse geared turbines. 4 shafts. S.H.P.: 100,000=32.5

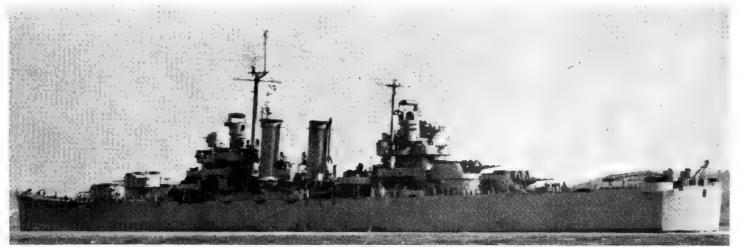
Mar. 1952.

9 de Julio refers to 9 July, 1816, when the Argentine provinces signed the Declaration of Independence. 17 de Octubre was renamed General Belgrano in 1956 following the overthrow of President Peron the year before.

Drawing
Port elevation and plan. Scale: 128 feet=1 inch.

The hanger in the hull right aft could accommodate The hanger in the hull right aft could accommodate one helicopter together with engine spare and duplicate parts, though 4 aircraft was the original complement. The incorporation of this hangar resulted in a very wide and nearly flat counter and high free-board aft and also gave the after guns higher command. Above the hanger a revolving crane was placed at the stern extremity overhanging the hangar hatch. The two aircraft catapults originally mounted above the hangar, as far outboard as possible, were removed. It was officially stated in May 1960 that the crane and catapult of these two cruisers have been removed, and they do not carry any aircraft, not carry any aircraft,





Launched

16 Mar, 1937

Completon

31 Jan. 1939

Guns:

Tubes:

Armour:

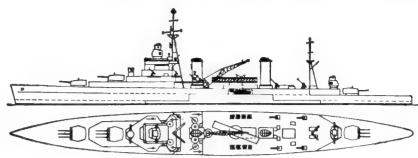
9—6 inch, 4—47 mm., 14—40 mm. AA.
6—21 inch (tripled)
3" side, 2" deck, 2" gunhouses, 3" C.T.
Parsons geared turbines. 3 shafts. Machinery:

S.H.P.: 54,000=30 kts. 4 Yarrow, pressure 300 lb. 1,500 tons 7,500 miles at 12 kts. Boilers: Oil fuel:

Complement: 800

General General Specially designed as Training Cruiser. Named after the Republic. Cost 6,000,000 gold pesos (about £1,750,000). The catapult originally mounted for the two Seagull Amphibion aircraft formerly carried was supressed, and it was officially stated in May 1960 that the crane was also removed. Sailed on world cruise with cadets on 18 July 1961.

Laid down Jan. 1936 Builders
Vickers-Armstrongs Ltd., Barrow-in-Furness LA ARGENTINA



Gunnery

Original 4 inch guns were removed in 1950 and 40 mm. guns added

Port elevaton and plan. Catapult and crane have been removed. Scale 128 feet=1 inch.



LA ARGENTINA

1963, Bob Turner

DESTROYERS

Pennant No. D 20 D 21 D 22 BROWN (ex-U.S.S. Heerman, DD 532) ESPORA (ex-U.S.S. Dortch, DD 670) ROSALES (ex-U.S.S. Stembel, DD 644)

Builders
Bethlehem Steel Co., San Francisco
Federal S.B. & D.D. Co., Port Newark
Bath Iron Works Corporation, Bath, Maine

Laid down 8 May. 1942 1942 21 Dec. 1942

Launched 5 Dec. 1942 20 june 1943 8 May 1943

Completed 6 July 1943 16 July 1943 7 Aug. 1943

3 Ex-U.S. "Fletcher" Class

Displacement:

2,100 tons standard (3,050 tons

Dimensions: Guns:

2,100 tons standard (3,050 tons full load)
376\frac{1}{2} (0.a.)\times 39\frac{1}{2}\times 12\frac{1}{4} (mean),
18 (max.) feet
4—5 inch, 38 cal., 6—3 inch,
50 cal. AA. (revised uniform armament)
5—21 inch (quintupled).
2 fixed Hedgehogs, 1 D.C. rack,
2 side-launching torpedo racks
2 sets G.E. geared surbines, 2 shafts, S.H.P.: 60,000=35 kts,
4 Babcock & Wilcox
650 tons
6,000 miles at 15 kts.
300 Tubes: A/S weapons:

Machinery:

Boilers: Oil · fuel: Radius:

Complement: 300

Former United States destroyers transferred to the Argentine Navy on 1 Aug. 1961. Espora is of the later "Fletcher" class.

Photographs

A photograph of Rosales (as U.S.S. Stembel), a port dead broadside view, appears in the 1962-63 to 1964-65 editions.



BROWN

1965, Argentine Navy, Official

6 "Buenos Aires" Class

1,375 tons standrad, 1,820 to 1,850 tons normal (1,980 to 2,010 tons full load) 312 (pp.), 320 (w.l.), 323 (o.a.)×34½×103 (mean) feet 4—47 inch, 6—40 mm. AA., 5 M.G. Displacement:

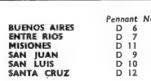
Dimensions: Guns:

Tubes: A/S weapons: 4—21 inch (quadrupled) 4 D.C.T.

Parsons geared turbines. 2 shafts, S.H.P.: 34,000=35 kts. 3, or 3-drum type 450 tons Machinery: Boilers:

Oil fuel; Radius; Complement; 4,100 miles at 14 kts. 200

General
All laid down in 1936 and completed in Mar.-Oct.
1938. Corrientes of this class was lost by collision
with the cruiser Admirante Brown on 3 Oct. 1941.
Named after provinces of the Argentine Republic.
Classification changed from Exploradores to Torpedores in 1952 and from Topederos to Destructores in
1957. Four torpedo tubes were removed in 1956.
Photographs
A photograph of Santa Cruz appears in the 1952-53
to 1956-57 editions, of San Juan in the 1953-54 to
1958-59 editions, of Entre Rios in the 1957-58 to
1963-64 editions. General



Bullders Vickers-Armstrongs Ltd., Barrow-in-Furness Vickers-Armstrongs Ltd., Barrow-in-Furness Cammell Laird & Co. Ltd., Birkenhead John Brown & Co. Ltd., Clydebank John Brown & Co. Ltd., Clydebank Cammell Laird & Co. Ltd., Birkenhead

Launched 21 Sep. 1937 21 Sep. 1937 23 Sep. 1937 24 June 1937 24 Aug. 1937 3 Nov. 1937

Launched



BUENOS AIRES

1964, Argentine Navy, Official

FRIGATES

2 "Azopardo" Class

Displacement:

Dimensions:

1,160 tons standard, 1,220 tons normal (1,400 tons full load) 279×31½×10 feet 1—4·1 inch, 6—40 mm, AA. 1 Hedgehog. 4 Depth Charge Mortars

Guns: A/S weapons: Machinery:

Boilers: Oil fuel: Radius:

1 Hedgehog. 4 Depth Charge Mortars 2 Parsons steam turbines. 2 shafts. S.H.P.: 5,000=20 kts. 2 Water tube 3-drum type 340 tons 2,300 miles 167

Complement:

Both built at Astillero Nav. Rio Santiago. Improved "King" type. Azopardo is named after the Argentine naval hero. Officially rated as frigates.

AZOPARD PIEDRABUENA Pennant No.

Laid down:

Launched 11 Dec. 1953 17 Dec. 1954

Completed 7 July 1957 16 Dec. 1958



AZOPARDO

1966, Argentine Navy, Official

SARANDI (ex-U.S.S. Uniontown, ex-Chattanooga, PF 65)

Pennant No. P 33

Builder Leatham D. Smith S.B. Co., Sturgeon Bay, Wisconsin

Laid down 21 Apr. 1943 Launched 7 Aug. 1943

Completed 15 Sep. 1944

I "Sarandi" Class Ex-U.S. PF Type

Displacement: Dimensions:

Guns: A/S weapons:

Machinery: Boilers:

1,445 tons standard, 1,920 tons normal (2,415 tons full load) 285\(\frac{1}{2}\) (w.l.), 304 (o.a.)\(\times 37\)\(\frac{1}{2}\)\(\times 13\)\(\frac{2}{3}\) feet 2—4·1 inch. 8—40 mm, AA. 1 Hedgehog, 6 D.C.T. Triple expansion. 2 shafts, i.H.P.: 5,500=19 kts. 2. of 3-drum type 700 tons 7,800 miles at 12 kts. 175

Oil fuel; Radius: Complement:

SARANDI

1960, Argentine Navy, Official

General Former United States patrol escort of the "Tacoma" class. This ship bears the name of a frigate which saw prominent action during the War of Independence. Sister ship Santisima Trinidad, P 34 (ex-H.M.S. Calcos, ex-Hannam) was reclassified as a surveying vessel in 1963 (see next page).

Disposals

Sister ship Heronia (ex-U.S.S. Reading, PF 66) was withdrawn from active service and scrapped in 1966.

The former United States patrol frigate Hercules,

P 31, (ex-U.S.S. Asheville, PF 1, ex-H.M.C.S. Nadur, ex-H.M.S. Adur) first of the U.S. "Asheville" class (British "River" type) was stricken from the list in

CORVETTES

2 "King" Class

Rated as Patrol Vessels

Displacement:

Dimensions: Guns:

A/S weapons: Machinery:

Oil fuel: Radius:

90 tons 9,000 miles at 12 kts. 130

Complement:

General
Both built at Astillero Nav. Rio Santiago. Named after Captain John King, an Irish follower of Admiral Brown, who distinguished himself in the war with Brazil, 1826-28; and Captain Murature, who performed conspicuous service against the Paraguayans at the Battle of Cuevas on Aug. 6 1865.

Photographs
A photograph of King appears in the 1952-53 to 1963-64 editions.

KING MURATURE Pennant No.

Laid down 1938 1938 Launched Dec. 1943 July 1945

Completed 28 July 1946 18 Nov. 1946



MURATURE

1964, Argentine Navy, Official

I Ex-British "Flower" Class

Displacement: Dimensions:

995 tons standard, 1,220 tons normal (1,375 tons full load) 2063×343×143 feet 1—4-1 inch AA., 2—20 mm.

A/S weapons: Machinery:

Guns:

AA. I I AA.

1 Headgehog, 4 D.C.T.

Triple expansion, 1 shaft.

1.H.P.: 2,750=16 kts. (max.)

Oil fuel: Radius:

2 350 tons 6,800 miles at 10 kts. 106

Complement:

Former British modified "Flower" Class corvette (frigate). Transferred in 1949, Perpetuates the name of a corvette which distinguished herself in the War of Independence, Pennant No. P 10.

REPUBLICA (ex-Smilax, ex-Tact, ex-PG 98)

Builders Collingwood Shipyards Launched 24 Dec. 1942

Converted 21 June 1943



REPUBLICA

1960, Argentine Navy, Official

MINESWEEPERS

4 "Bouchard" Class

			2000.10.0	
Name	Pennant	No.	Builders	Launched
GRANVILLE	M 4		Rio Santiago Naval Yard	27 Jan. 1937
PY	M 10			30 Mar. 1938
ROBINSON	M 3		Hansen & Puccini, San Fernando	18 Aug. 1938
SEAVER	M 12		Hansen & Puccini,San Fernando	18 Aug. 1938
Displace	ment:	full	tons standard, 605 to 620 tons norm load)	
Dimensio	ons:	164	$(pp.)$, 197 (o.a.) $\times 24 \times 8\frac{1}{2}$ feet (ma.	x.)
Guns:		4	40 mm. Bofors AA., 2 M.G.	
Machine	ry:	2 :	ets M.A.N. 2-cycle diesels, B.H.P.; 2,	000=16 kts.
Oil fuel	:		tons	
Radius:		3,0	00 miles at 10 kts.	

Complement: 70

All laid down in 1935-37. First Argentine warships built in local shipyards, Named after distinguished naval officers (several of whom were of British extraction). Carry mines, Recent Disposals

It was officially stated in 1963 that sister ships Drummond, Parker and Spiro of this class had been stricken from the Navy List.

Bouchard of this class was transferred to the Paraguayan Navy in 1964.



1960, Argentine Navy, Official

TORPEDO BOATS MOTOR

45 tons standard (50 tons full load)
71 (pp.), 78\frac{1}{2} (o.a.) \times 20 \times 4\frac{1}{2} feet
2-40 mm. NA. AA., 2-5 inch Br. AA. M.G.
4 torpedo cradles
2 rocket projectors Displacement: Dimensions: Guns: Torpedoes: 2 rocket projectors
3 Packard engines. H.P.: 4,500=42 kts. (max.)
9 tons aviation spirit.
1.000 miles at 20 kts. A/S weapons: Machinery: Radius:

Complement:

General
"Higgins" type. Built in New Orleans, U.S.A. in 1946. Originally designated as an "LT" series (1 to 9).
Recent Disposals
P 81, P 83, P 85, P 87 and P 89 wee officially removed from the List in 1963,

and P 82, P 86 and P 88 n 1966.



P 81

Argentine Navy, Official

Disposals

The very old river monitors Parana and Rosarlo were withdrawn from service in

Of the two repair ships, Ingeniero Gadda (ex-U.S. LST 82) was withdrawn from active service in 1960 and Ingeniero Iribas (ex-U.S. LST 81) in 1966.

VESSELS (Avisos) PATROL

GOYENA (ex-U.S. Dry Tortugas)

TOMPSON (ex-U.S. Sombrero Key)
Displacement: 1.863 tons full load
Dimensions: 191½×37×18 feet

Machinery: 2 Enterprise diesels, B.H.P.: 2,250

Oil fuel: Complement: 60

General

Built by Pendleton Shipyard Co., New Orleans. Launched in 1943 and leased the Argentine Navy in 1965.

COMMANDANTE GENERAL IRIGOYEN (ex-U.S.S. Cahuilla, ATF 152)
COMMANDANTE GENERAL ZAPIOLA (ex-U.S.S. Arpaho, ATF 68)
Displacement: 1,235 tons standard (1,675 tons full load)
Dimensions: 195 (w.l.), 205 (o.a.) × 38½ × 12 (mean), 15½
(max.) feet

1 mux.) reet
1—3 irch, 4—40 mm. AA, 2—20 mm, AA. originally.
but some armaments reduced
4 sets diesels with electric drive. B.H.P.: 3,000=16.5 Guns:

Machinery: kts. Complement: 85

Former U.S. fleet ocean tugs of the "Apache" class. Fitted with powerful pumps and other salvage equipment. Both build by Charleston S.B. & D.D. Co., Charleston, S.C. Launched on 2 Nov. 1944 and 22 June 1942, respectively, and completed on 10 Mar. 1945 and 20 Jan. 1943. Transferred to Argentina at San Diego, California, in 1961, Pennant Nos. 41 and 40, respectively. Classified as tugs until 1966 when they were re-rated as patrol vessels (avisos).

Patrol Vessels (Avisos) contd -

CHIRIGUANO (ex-U.S. ATA 227)
DIAGUITA (ex-U.S. ATA 124)

SANAVIRON (ex-U.S. ATA 227)
YAMANA (ex-U.S. ATA 126)

689 tons standard (800 tons full load) 1333 (w.l.), 143 (o.a.) × 34 × 12 feet 2-20 mm, N.A. AA. Displacement: Dimensions: Guns: Diesel-electronic B.H.P.: 1,850=12.5 kts. 154 tons 16,700 miles Machinery: Oil Fuel: Radius:

Complement: General

General Former U.S. auxilliary ocean tugs. Built by Levingstone Shipbuilding Co., Orange, Texas, U.S.A., in 1945. Diaguita and Yamana are fitted as rescue ships. All four of above ships bear names of South American Indian tribes. Classified as ocean salvage tugs until 1966 when they were re-rated as patrol vessels (avisos).

(Buques Oceanograficos) SURVEYING VESSELS COMODORO AUGUSTO LASSERE (ex-Santisima Trinidad, P 34,

ex-H.M.S. Caicas ex-Hannam,

1,430 tons standard (2,415 tons full load)

285\(^1\) (w.l.), 304 (o.a.)\(\times 37\(^1\)\(\times 13\(^1\)\) feet

2—4-1 inch, 8—40 mm. AA.

1 Hedgehog, 6 D.C.T.

Triple expansion: 2 shafts. 1.H.P.: 5,500=19 kts.

2, of 3-drum type

700 tons

7,800 miles at \$2.500. Displacement: Dimensions: Guns:

A/S weapons: Machinery:

Boilers: Oil fuel: Radius: 7,800 miles at 12 kts. Complement:

General Former patrol frigate of the British "Colony" class (United States "Tacoma" type). Built by the Walsh-Kaiser Yard, Providence, R.I. Laid down in 1943, launched on 6 Sep. 1943, and completed on 2. Jam. 1944. Served in the Argentine Navy as a frigate until 1963, when she was reclassified as a surveying vessel and her name changed from Santisima Trinidad to Comodoro Augusto Lassere. Officially rated as Buque de Investigaciones científicas. Pennant No. Q 9.



COMODORO AUGUSTO LASSERE

1965, Argentine Navy, Official

CAPITAN CANEPA (ex-H.M.C.S. Barrie)

995 tons standard (1,265 tons full load) $208\times33\frac{1}{2}\times16\frac{1}{2}$ feet Triple expansion, I.H.P.: 2,750=15 kts. Displacement: Machinery: Oil fuel:

Radius: 271 tons 54 Complement:

Former Canadian corvette (frigate) of the "Flower" class. Launched in Canada on 12 Nov. 1940. Completed on 12 May 1941. A photograph of Capitan Canepa appears in the 1958-59 to 1964-65 editions.

USHUAIA

BDM 1

1,275 tons standard (1,500 tons full load) $211\times31\frac{1}{2}\times11\frac{1}{2}$ feet Displacement: Dimensions: 2 sets diesels. 2 shafts. B.H.P.: 1,200=12.7 kts. 60 tons Guns: Machinery: Oil fuel: Radius: 3.500 miles General Complement:

General

Built at Rio Santiago, Launched in 1939. Named after the capital of the territory
of Tierra del Fuego. Pennant No. B4. Formerly rated as a transport until 1959,
when she was reclassified as a survey ship. She is also a buoy ship for the laying
and servicing of buoys and lights. Distosals

The survey ship Alferez Mackinley was withdrawn from active service in 1966. The old survey ship Bahia Blanca (ex-San Luis) was deleted from the list in

Her sister ship Madryn became a training ship in 1961 (see next page).
The gantry Ship Samba (ex-U.S. LST 1104) is no longer a unit of the Navy.

LANDING SHIPS TANK

CABO SAN BARTOLOME BDT 1 CABO SAN GONZALO BDT 4

GABO SAN ISIDRO BDT 6
GABO SAN PIO BDT 10
GABO SAN VICENTE BDT 14

2,366 tons (beaching), 4,080 tons (full load) 316 (w.l.), 328 (o.a.) \times 50 \times 11 $\frac{1}{2}$ (14 max.) feet 2 diesels. 2 shafts. B.H.P.: 1,800=11 kts. Displacement: Dimensions: Machinery: Oil fuel: Radius: 700 tons 9.500 at 9 kts.

Complement:

Ex-U.S. LST's 875, 998, 872, 919, 1108. Bult by Puget Sound Bridge and Dredging Co., Seattle, U.S.A. Launched in 1944. Have two rudders. BDT 5, BDT 8, BDT 9, and BDT 12, were withdrawn from service in 1958-60, and BDT 2, BDT 7, BDT 11 and BDT 13 in 1964. Cabo San Francisco de Paula, BDT 3 was withdrawn from active service in 1966 and is now being used as a store ship.

MEDIUM LANDING SHIPS

BDM 2
743 tons (beaching), 1,095 tons (full load)
196½ (w.l.), 203½ (o.a.)'×33½×6 (8 max.) feet
2 sets diesels, 2 shafts, B.H.P.; 2,800=13 kts.
170 tons Displacement: Dimensions: Machinery: Boilers: 4.100 miles at 12 kts. Oil fuel:

Complement:

Former American LSM's 267 and 86, respectively. Pennant Nos. Q 69 and Q 70.

INFANTRY LANDING CRAFT

BDI 1 (Q 54)

BDI 4 (Q 57)

BDI 15 (Q 68)

Displacement: Dimensions: Guns: Machinery:

230 tons light (387 tons full load)
153 (w.l.), 159 (o.a.)×23½×5 feet
2—20 mm. AA. (only in BDI 4)
8 sets diesels. B.H.P.; 3,200=14 kts. Two reversible propellers
110 tons

Oil fuel: Rading

6,000 miles at 12 kts. Complement:

General General
EX-American LCIL's 583, 606 and 689, BDI 3, BDI 6, BDI 8, BDI 9, BDI 11 and BDI 13 were withdrawn from service in 1958. BDI 1 and BDI 4 were given new Q numbers as shown above instead of Q 64 and 67. BDI 10 (Q 63) was converted into an oiler in 1960 and renamed Punta Lara. BDI 5, BDI 7, BDI 12 and BDI 14 were officially deleted from the list in 1961, and BDI 2 in 1963.

officially deleted from the list in 1961, and BDI 2 in 1963.

Minor Landing Craft

There are also 20 personnel and vehicle landing craft, all ex-American LCVP's numbered EDVP 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 17, 19, 20, 21, 22, 24, 27 and 28, Displacement 12 tons. Dimensions; 39\\$XIO\\$\frac{1}{2}\\$\rightarrow\\$\frac{1}{2}\\$\frac{1}{2}\\$\frac{1}{2}\\$\frac{1}{2}\\$\rightarrow\\$\frac{1}{2}\\$\frac{1}{2}\\$\rightarrow\\$\frac{1}{2}\\$\rightarrow\\$\frac{1}{2}\\$\rightarrow\\$\rightarrow\\$\frac{1}{2}\\$\rightarrow\\$\frac{1}{2}\\$\rightarrow



SALVAGE VESSEL (Buque de Salvamento)

GUARDIAMARINA ZICARI (ex-Tehuelche, ex-H.M.S. Kingfisher, ex-King Salvor)

Displacement: Dimensions: Machinery: Oil fuel:

1.600 tons 200½ (pp.), 216 (o.a.) \times 37½ \times 13 (max.) feet Triple expansion. 2 shafts. I,H.P.: 1,500=12 kts. 310 tons

82

Complement:

Former British submarine rescue ship. Built as an Admiralty ocean salvage vessel by Wm. Simons & Co. Ltd., Renfrew, Scotland, and laid down on 17 May 1941, launched on 18 May 1942 and completed on 17 July 1942. Converted into a Submarine Rescue Bell and Target Ship in 1953-54. Paid off as Bell Rescue Ship in 1958 and subsequently employed as a Submarine Support Ship and Tender. Purchased from Great Britain In Dec. 1960, and sailed from Chatham to Argentina in Apr. 1961, and renamed Tehuelche. Again renamed Guardiamarina Zicarl in Apr. 1963.



GUARDIAMARINA ZICARI

1962, Argentine Navy, Official

TRAINING SHIPS (Buques Escuela)

LIBERTAD

Displacement: Dimensions: 3.025 tons standard (3,765 tons full load) 262 (w.l.), 301 (o.a.)×47×21½ feet 1—3 inch, 4—40 mm, AA., 4—47 mm. salu 2 Sutzer diesels. B.H.P.: 2,400=13·5 kts. mm. saluting Guns: Machinery: 15.000 miles 370 (crew.) plus 150 cadets Complement:

General

Built in the State-owned shipyards at Rio Santiago. Sailing ship. Three masts. Launched on 30 June 1956.

Rivadavia, ex-San Juan) MADRYN (ex-Comodoro

843 tons standard (970 tons full load) 195 (pp.), 2063 (o.a.)×33×113 feet 1—3 inch Displacement: Dimensions: Guns:

Hawthorn-Werkspoor Diesel. 1 shaft. B.H.P.: 750= Machinery: 12-5 kts.
1 single-ended Scotch to supply steam to auxiliary machinery Boiler:

Oil fuel:

88 tons 7,000 nautical miles Radius:

General

Built by Hawthorn Leslie & Co., Ltd., Hebburn-on-Tyne. Launched on 27 Sep.
1927. Delivered in Feb. 1928 Named after Argentine port. Pennant No. Q6.
Formerly a surveying vessel until 1961, when she became a training ship. Sister ship of surveying vessel Bahla Blanca, officially stricken from the list in 1963.

The very old training ship Presidente Surmiento was officially deleted from the list In 1961

TRANSPORTS (Transportes)

3 Canadian Built

BAHIA AGUIRRE

BAHIA BUEN SUCESO

BAHIA THETIS

Displacement: Dimensions: Guns:

Machinery: Oil fuel:

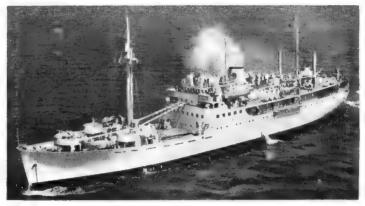
3.100 tons standard (5,000 tons full load)
334\(\frac{1}{2}\times 47\times 13\(\frac{1}{2}\) feet
(Bahla Thetis) 2—4·1 inch 2—40 mm. Bofors AA. 2—
20 mm. NA. AA., 4—47 mm. saluting (Bahla Aguirre)
2 sets Nordberg diesels. 2 shafts. B.H.P.: 3,750=16 kts.
500 tons (Bahla Thetis), 422 tons (Bahla Buen
Suecesco), 355 tons (Bahla Aguirre)
15,000 miles

Radius:

Complement: 100

General

Built in Canada by Halifax Shipyards. Bahin Buen Successo was completed at Halifax, Nova Scotia, in June 1950. Pennant Nos. B 2, B 6 and B 8, respectively. first two are troop transports, Bahla Thetis was used as a training ship and carried



BAHIA THETIS

Added 1960, Skyfotos

I Italian Built

LA PATAIA

3.825 tons standard (6,000 tons full load) 335 $\frac{1}{2}$ \times 50 $\frac{1}{2}$ \times 23 feet 2 sets diesels, 2 shafts. B.H.P.: 3,400=16 kts. 500 tons 15.000 miles 100 Displacement: Dimensions: Machinery: Oil fuel: Radius: Complement:

Built in Italy by C. R. del Adriatico (CRDA), Laid down on 25 Apr. 1948. launched on 25 June 1949, and completed in June 1950 being delivered on 2 Oct. 1951. Pennant No. B 10, Troop transport.

Sister ships Le Maire and Les Eclaireurs were scrapped in 1964, it was officially stated.



LA PATAIA

Added 1964, Argentine Navy, Official

I Ex-U.S. FS Type

SAN JULIAN (ex-FS 281)

Displacement: Dimensions: Machinery: Oil fuel:

930 tons 176×32 $\frac{1}{2}$ ×11 feet 2 sets diesels. 2 shafts. B.H.P.: 1,000=10 kts. 75 tons

Complement:

General Ex-U.S. Army small cargo carrier. Built by Wheeler Shipbuilding Corpn, Launched in 1944. Pennant No. B7, It was officially stated in May 1960 that this vessel, formerly rated as a transport, was to be converted into a salvage vessel, but in Dec. 1961 it was officially stated that she would in future be a transport ship.

The transport Ushuala has been reclassified as a surveying vessel (see previous page).

Disposal of German Type
The transport Beagle has been stricken from the Navy List, is was officially stated in 1963.

OILERS (Buques Tanques)

I British Built

PUNTA MEDANOS

Displacement: Measurement:

Dimensions:

Boilers:

14,352 tons standard (16,331 tons full load) 8,250 tons deadweight 470 (pp.), 502 (o.a.)×62×28½ feet Double reduction geared turbines 2 shafts. S.H.P.: 9,500=18 kts. (over 19 kts. attained on trials) 2 Babcock & Wilcox two-drum integral furnace water-tube tube

1,500 tons 13,700 miles Oil fuel: Radius: Complement:

General

Built by Swan, Hunter & Wigham Ltd., Wallsend-on-Tyne. Launched on 20 Feb. 1950. Completed on 10 Oct. 1950. A unit of the Argentine Navy available as a training vessel for personnel. She embodied experience gained in previous fleet oilers, and was then the finest equipped and fastest of her type affoat. Fitted for fuelling warships at sea. Boilers built under licence by the Wallsend Slipway & Engineering Company. Steam conditions of 400 lb. per sq. in. pressure and 750 deg F. temperature. Pennant No. B 18.



PUNTA MEDANOS

Added 1964, Argentine Navy, Official

I Ex-U.S. AOG Type

PUNTA DELGADA (ex-Sugarland, ex-Nanticoke, AOG, 66)

5,930 tons standard (6,090 tons full load) $325\times48\frac{1}{4}\times20$ feet

Dimensions:

Westinghouse diesel. I shaft. B.H.P.: 1,400=11.5 kts.

Machinery: Oil fuel: Radius: 150 tons 9,000 miles Complement:

General

Named after geographical location, U.S.M.S. type T1-M-BT1. Built by St. John's River S.B. Co, Launched on 7 Apr. 1945.

Of two sister ship Punta Ninfas (ex-Black Bayou, ex-Michigamme, AOG 65) was scrapped in 1964, and Punta Loyola (ex-Capitan, ex-Klickitat, AOG 64) was withdrawn from active service in 1966, it is officially stated.



PUNTA Class

Official

I U.S. Built

PUNTA RASA (ex-Salt Creek)

Displacement: Dimensions: Machinery: Oil fuel:

2.055 tons standard (2.253 tons full load) 221 \times 37 \times 13} feet Diesel. 1 shaft. B.H.P.: 800=10 kts, 60 tons

Radius: Complement: 3,500 miles

General

Built by Barr.es Dulath S.B. Co. Launched Im 1943 and completed in 1944. Pennant No. B 14. Commissioned in 1947. Named after Cape. U.S. M.C. type T1-M-A2.

Sister ship Punta Ciguena (ex-Sulphur Bluff) was officially deleted from the list in 1961.

I Belgrano Type

PUNTA ALTA

Displacement: Measurement: Dimensions: Machinery:

1,600 tons standard (1,900 tons full load) 800 tons deadweight 210×33½×12½ feet Diesel. 1 shaft, B.H.P.: 1,850=8 kts.

146 tons 4,700 m Oil fuel:

General

Built at Puerto Belgrano. Launched in 1937. Named after a headland. Pennant No. B 12.

Punta Lara (ex-8DI 10, Q 63, ex-U.S.S. LCIL 688) converted to an oiler, was deleted from the list in 1961.

ICEBREAKER (Rompehielos)

GENERAL SAN MARTIN

Displacement: Measurement: Dimensions: Guns: Aircraft:

Machinery:

4,854 tons standard (5,301 tons full load)
1,600 tons deadweight
279×61×21 feet
1—4 1 inch, , 2—40 mm. AA. Bofors
1 recommaissance aircraft and 1 helicopter
4 diesel-electric, 2 shafts. H.P.: 7,100=16 kts.
37 000 miles miles

Endurance: Oil fuel: 37,000 mil Complement: 160

General

Built by Seebeck Yard of Weser A.G. Launched on 24 June 1954. Completed in ct. 1954. Used by the Antarctic Institute. Fitted for research. Specially insulated against cold.



GENERAL SAN MARTIN

1966, Argentine Navy, Official

TUGS (Remolcadores)

GUAYCURU

Displacement: Dimensions: Machinery:

368 tons (max.) $107\frac{1}{4} \times 24\frac{1}{8} \times 12\frac{1}{4}$ feet Skinner Unaflow engines. I.H.P.: 645=9 kts. Cylindrical (Scottish) 52 tons 2,200 miles at 7 kts.

QUILMES

TONOCOTE

Boilers: Cil fuel: Radius: Complement:

General "Quilmes" class tugs built at Rio Santiago, Argentina, in the State Naval Ship-yards. Laid down on 23 Aug. and 15 Mar. 1956, respectively launched on 27 Dec. 1959 and 8 July 1957 and completed on 29 July and 30 Mar. 1960. Pennant numbers R 33 and R 32.

PEHLIENCHE

Displacement: Dimensions:

330 tons $105 \times 24\frac{7}{4} \times 12\frac{7}{4}$ feet Triple expansion, I.H.P.: 600=11 kts,

Machinery: Boiler: 2 36 tons Oil fuel:

Radius: Complement: 1,200 miles 13

Both build in Rio Santiago Naval Yard, Commissioned for ervice in 1954.

MATACO

Displacement:

Measurement: Dimensions: Machinery: Boilers

600 tons 339 tons gross 130½ (pp.). 137 (w.l.) 139 (o.a.) × 28½ × 11½ feet Triple expansion. 2 shafts. I.H.P.: 1,200=12 kts.

TOBA

Oil fuel: Radius: Complement: 3,900 miles

General

Both built by Hawthorn Leslie, Ltd., Hebburn-on Tyne, Launched on 24 Jan. 1928 and 23 Dec. 1927, respectively. Both completed in Mar. 1928.

PUELCHE

OUERANDI

HUARPE

Displacement: Dimensions:

370 tons 107 × 27½ × 12 feet Triple expansion I.H.P.: 800 1 cylindrical (Howaldt Werke) 58 tons Machinery: Boilers: Oil Fuel: Complement:

General

Build by Howaldt Werke in 1927. Entered service in the Argentine Navy in 1942

ONA

Displacement: Measurement: Dimensions: 615 tons

345 tons gross 134½ × 30 × 11 feet Triple expansion. I.H.P.: 1,300=12 kts. Machinery: Boilers:

Oil Fuel; Radius: Complement: General

115 tons 2,400 mifes

Build by John I. Thornycroft & Co. Ltd., Woolston, Southampton, Launched 1913. Disposals

The salvage tug Ranquel was withdrawn from service and deleted from the list in May 1960.

The salvage tug Charrua (ex-U.S. Army LT 224) was officially stricken from the list in 1963. Her sister ship Guarani was lost without trace in the Straits of Magellan on 15 Oct. 1958.

ROYAL AUSTRALIAN NAVY

Naval Board

President: Minister for the Navy: Frederick C. Chaney, Esq., A.F.C., M.P.

First Naval Member and Chief of Naval Staff:

Vice Admiral Allan W.R. McNicoll, K.B.E., C.B., G.M.

Second Naval Member and Chief of Naval Personnel:

Rear-Admiral J.S. Mesley, C.B.E., M.V.O, D.S.C.

Third Naval Member and Chief of Naval Technical Services:

Rear-Admiral F. L. George, C.B.E.

Fourth Naval Member: Rear-Admiral W.D.H. Graham, D.S.C.

Secretary, Department of the Navy: Samuel Landau, Esq., O.B.E., M.A. Flag Officer Commanding Australian Fleet: Rear-Admiral V.A. Smith, C.B.E., D.S.C.

Deputy Chief of the Naval Staff: Rear-Admiral R. I. Peek, O.B.E., D.S.C.

Australian Naval Representative in London: Commodore D.H.D. Smith.

Naval Attaché in Washington: Captain E. J. Peel, D.S.C., R.A.N.

Three Year Defence Programme

Extended refit of aircraft carrier Melbourne. Modernisation of destroyers Vampire and Vendetta.

Construction of 20 patrol boats, and a submarine rescue vessel.

Navy Estimates

Personnel

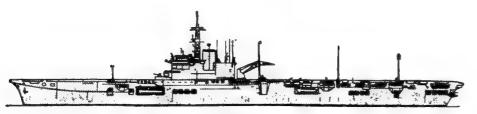
1 January 1960: 10,594 officers and sailors.
1 January 1962: 10.832 officers and sailors.
1 January 1964: 11,228 officers and sailors.
2 January 1965: 12,822 officers and sailors.
3 January 1966: 13,960 officers and sailors.
4 January 1966: 13,960 officers and sailors.

Mercantile Marine

Lloyd's Register of Shipping: 306 vessels of 726,999 tons gross

Silhouettes

Scale: 150 ft. = 1 inch.



MELBOURNE



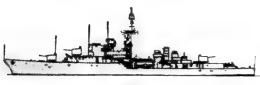
DERWENT, STUART



HOBART, PERTH



PARRAMATTA, YARRA



VAMPIRE



ANZAC

("B" turret now replaced by chartroom)



CULGOA



VENDETTA



ARUNTA



BARCOO



TOBRUK



QUIBERON



"RIVER" Class

AIRCRAFT CARRIERS

I Modified "Majestic" Class

16,000 tons standard (20,000 tons full load)
Length: 650 (w.l.) 701\frac{1}{2} (o.a.) feet. Beam (hull): 80\frac{1}{2} feet. Width: 80 (flight deck) 126 (o.a.) feet (including 6 degree angled deck and mirrors). Draught: 25 feet
Hangar: 444×52×17\frac{1}{2} feet
25—40 mm, Bofors AA.
8 Gannet turbo-prop anti-submarine aircraft. 16 Westland Wessex anti-submarine helicopters (see Aircraft notes)
Parsons single reduction geared turbines. 2 shafts, S.H.P.: 40,000=24 kts. Sea speed 23 kts. (max.)

Boilers:

Displacement: Dimensions:

Guns: Aircraft:

Machinery:

40,000=24 kts. Sea speed 23 kts. (max.)
4 Admiralty 3-drum type 1,209 to 1,250 (peace), 109 officers (120 to 130 with squadrons), 1,100 to 1,120 ratings 1,450 officers and ratings (war) Complement:

MELBOURNE (ex-Majestic)

Pennant No.: Deck Letter: R 21 M (ex-Y)

Bullders: Lald down Launched
Vickers-Armstrongs
Barrow-in-Furness Lald down Launched
15 Apr. 1943 28 Feb. 1945

Completed 8 Nov. 1955

At the end of the Second World War, when she was still incomplete, work on this ship was virtually brought to a standstill pending a decision as to future naval requirements. When full-scale work was resumed during 1949-55, and after her design had several times been re-cast she underwent reconstruction and modernisation in Great Britain, including the fitting of the angled deck the steam catapult and the mirror deck landing sights, and was transferred to R.A.N. on completion. She was commisioned and renamed at Barrow-in-Furness on 28 Oct. 1955, sailed from Portsmouth on 5 Mar, 1956 and arrived at Freemantle. Australia, on 23 April 1956. She became flagship of the Royal Australian Navy at Sydney on 14 May 1956. She cost £A8,309,000.

Melbourne is to undergo extended refit at a cost of \$A\$,000,000 to enable her to operate with S2E Tracker and A4E Skyhawk aircraft and to improve habitability.

Engineering
Boilers work at a pressure of 430 lb. per sq. inch and a temperature of 700 degrees Fahrenheit of superheat.

Aircraft
The aircraft complement formerly comprised 8 Sea
Venom jet fighters, 17 Gannet turbo-prop anti-submarine
aircraft, and 2 Sycamore helicopters.

Fourteen S2E Tracker anti-submarine aircraft and ten A4E Skyhawk fighter/bombers are on order in the U.S.A. for Melbourne, (in service 1967) at a cost of \$A46,000,000

Redar
The ship was fitted in 1963 with a Dutch type radar aerial on the foremast similar to that in the Type 12 frigates.

Photographs
A port bow oblique aerial view of Melbourne appears in the 1957-58 to 1964-65 editions, a large port quarter aerial oblique view in the 1962-63 and 1963-64 editions, a port quarter surface view in the 1961-62 edition, a dead overhead aerial view showing angled deck in the 1956-57 to 1961-62 editions, and a large port bow surface view in the 1955-56 to 1960-61 editions.

Drawing
Starboard elevation and plan as converted with the angled deck, Scale; 128 ft.=1 inch.

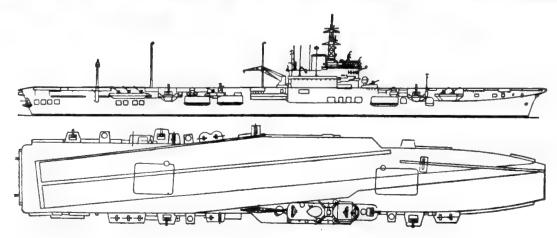


MELBOURNE

1965, Royal Australian Navy, Official



1964, Royal Australian Navy, Official



Aircraft Carriers - contd.

I "Majestic" Class

SYDNEY (ex-Terrible) Pennant No. Deck Letter A 214 (ex-R 17) S (ex-K)

Builders: H.M. Dockyard Devonport

Laid down:

Launched:

19 Apr. 1943 30 Sep. 1944

Completed: 5 Feb. 1949

Displacement:

14,380 tons standard (19,550 tons full load)
Length: 630 (pp.), 690\{ (flight deck), 698 (o.a.) feet. Beam: 80 feet. Width: 112\{ feet (o.a.) Draught: 25 feet 4-40 mm. AA. (single mountings) Dimensions:

Machinery:

ings)

Boilers: Complement: Ings)
Parsons single reduction geared turbines. 2 shafts. S.H.P.: 40,000 = 24.8 kts.
4 Admiralty 3-drum type 544 (34 officers, 510 ratings), nucleus as transport, Naval Reserve will provide balance of ship's company in emer-

This ship was handed over to the Royal Australian Navy on 16 Dec, 1948, accepted for service on 5 Feb, 1949, sailed from Devonport on 12 April and arrived in Australia in May. 1949.

Original Scheme
As an operational aircraft carrier she displaced 15,740 tons standard, carried Seafury fighters Firefly anti-submarine and reconnaissance squadrons, with a stowage capacity of 37 machines, mounted 30 Bofors 40 mm.
AA. guns, and her complement was 1,100 officers and ratings (peace), 1,300 (war).

Training and Conversion

It was officially announced on 4 Apr. 1957 that she would have a flying training role, but the ship was converted to a fast military transport in 1962, and was recommissioned in 1963. She also served as a training ship.

Photographs

A starboard bow oblique aerial view of Sydney as an aircraft carrier appears in the 1954-55 to 1961-62 editions, a port quarter surface view in the 1957-58

SYDNEY

1964, Royal Australian Navy, Official

edition, a starboard broadside view in the 1957-58 to 1962-63 editions, and a starboard quarter oblique aeriel view in the 1958-59 to 1963-64 editions. A starboard bow surface view of Sydney as a troop transport appears in the 1963-64 to 1965-66 editions.

Drawing

A plan and port elevation drawing of Sydney, as an aircraft carrier, drawn to a scale of 128 feet—1 inch, appears in the 1949-50 to 1963-64 editions, and a silhouette drawing in the 1949-50 to 1565-66 editions.



SYDNEY

1966, Royal Australian Navy, Official

SUBMARINES

4 British "Oberon" Class New Construction

ONSLOW OTWAY

Scotts' Shipbuilding & Engineering Co. Ltd., Greenock.

Laid Down Launched

24 Sept. 1965

2 July 1964

Completed

Displacement: Dimensions:

1,610 tons standard, 2,030 tons surface, 2,410 tons submerged $295\frac{1}{2}$ (o.a.), 241 (pp.)×26 $\frac{1}{2}$ ×18 feet

Tubes: Machinery: 18 feet
8—21 inch for homing torpedoes
Admiralty Standard Range diesels.
Electric drive
68 (6 officers, 62 ratings)

Complement:

It was officially announced by the Minister for the Navy in Canberra, Australia, on 22 Jan. 1963 that four submarines of the "Oberon" class were to be built in British shipyards under Admiralty supervision at an overall cost of £A5,000,000 each. Delivery date for the first, laid down on 2 July 1964, is Dec. 1966, with deliveries of the other three spread over the next 3 years. years.

Submarines of the Fourth Submarine Squadron of the Royal Navy are based at Sydney, Australia, for antisubmarine training.



OXLEY

1966, Royal Australian Navy, Official

GUIDED MISSILE ARMED DESTROYERS

3 U.S. "Charles F. Adams" Class

New Construction

3,370 tons standard (4,500 tons Displacement:

full load) 420 (w.l.), 440½ (o.a.)×47×15 Dimensions:

feet 2—5 inch, 54 cal, single-mount, Guns: rapid fire
"Tartar" surface-to-air missile

A/S weapons:

"lartar" surface-to-air missile single launcher Long range "lkara" system with two single launchers Geared steam turbines. 2 shafts. S.H.P.: 70,000=35 kts. Machinery:

Boilers: Complement: 333 (21 officers, 312 men)

Guided weapons:

On 6 Jan. 1962, in Washington, United States defence representatives and Australian military officials (on behalf of the Royal Australian Navy) and executives of the Defoe Shipbuilding Company, of Bay City, Michigan, signed a £A12,863,350 (\$A25,726,700 in the new Australian decimal currency introduced in 1966) contract for the construction of two guided-missile destroyers (shipbuilding cost only) destroyers (shipbuilding cost only),

On 22 Jan. 1963 it was officially announced by the Minister for the Navy in Canberra, Australia, that a third guided-missile destroyer was to be built in the United States for the Royal Australian Navy.

They are the first of their kind for the Australian

Navy.

In addition to the "Tartar" missiles, with a range of 15 to 20 miles, they are equipped with the very latest long range anti-submarine warfare weapons. These versatile ships are intended to be used to escort amphibious forces and to support them after their landings, to work with hunter killer groups in attacking submarines and to protect vital ocean convoys.

As compared with previous destroyers, the ships have greater length overall, more beam and heavier displacement. They have a new hull design with aluminium superstructures. The most recent hability improvements have been incorporated into their construction, including air conditioning of all living spaces.

The first ship of the class, Perth, was commissioned and formally handed over to the Royal Australian Navy at Boston Naval Shipyard, Massachusetts, on 17 July 1965 and she steamed into an Australian port, Brisbane, for the first time on 4 March 1966. Hobort commissioned at Boston Naval Shipyard on 16 Dec. 1965.

Cost

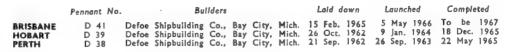
ort Original estimate about £A6.400,000 to £A7,000,000 Ich (with missiles and electronics £A20,000,000 each each).

New decimal currency: about \$A12,800,000 to \$A14,000,000 each (with missiles and electronics \$A40,000,000 each). The total cost of *Perth* is reported to be almost \$A50,000,000.

A port broadside surface view of Perth at sea on speed trials appears in the Addenda of the 1965-66 edition.

Appearance

For comparative appearance of these ships see "Charles F. Adams" class in the United States section, and "County" class in the United Kingdom section.





HOBART

1966, Royal Australian Navy, Official



HOBART

1966, Royal Australian Navy, Official



1966. Royal Australian Navy, Official

3 "Daring" Class

2.800 tons standard (3,600 tons full load)
366 (p.p.), 388½ (o.a.)×43×
12½ (mean), feet
6—4-5 inch in twin turrets, two forward and one aft, 6—40 mm. Bofors AA.
5—21 inch in quintuple mounting 1 three-barrelled depth charge Displacement: Dimensions: Guns:

Tubes: A/S weapons:

1 three-barrelled depth charge mortar (see below) English Electric geared turbines. 2 shafts. S.H.P.: 54,000=30.5 Machinery:

kts. Boilers: Oil fuel:

2 584 tons 3,700 miles at 20 kts. 327 officers and ratings Radius: Complement:

The above particulars refer to Vampire and Vendetta For slightly different data applying to Duchess, which has Squid instead of Limbo, see under "Daring" class in United Kingdom section).

All-purpose ships, equipped for surface engagements

All-purpose ships, equipped for surface engagements anti-aircraft defence, and anti-submarine warfare. Vampire and Vendetta are the largest destroyers ever built in Australia. They were ordered in 1946. The ships are powerfully equipped for both offensive and defensive purposes and have automatic radar steering. Their sister ship, Voyager, the prototype of the class, collided with the aircraft carrier Melbourne and sank off the southern coast of New South Wales on the night of 10 Feb. 1964. She was replaced by the British destroyer Duchess, lent to Australia by the United Kingdom for four years.

Modernisation

Modernisation
Vampire and Vendetta are to be modernised at a cost of \$A26,000,000, including the installation of Ikara anti-submarine weapons. It is expected that the after 4.5 inch twin gun mounting will be suppressed.

Vampire and Vendetta are of similar design, including all welded construction, to that of "Daring" class, built in Great Britain, but were modified to suit Australian conditions and have "Limbo" instead of "Squid" antisubmarine weapons.

Gunnery

The anti-aircraft gun batteries are laid and fired by radar.

Construction

The superstruction is of light alloy, instead of steel, to reduce weight and thus increase speed.

DESTROYERS

5	Name	Pennant No	Builders	Begun	Launched	Completed
	VAMPIRE VENDETTA	D 11	Cockatoo Island Dockyard, Sydney H.M.A. Naval Dockyard, Williamstown		27 Oct. 1956 3 May 1954	
	DUCHESS	D 154	John I. Thornycroft & Co., England	2 July 1948		23 Oct. 1952



VENDETTA

1965, Royal Australian Navy, Official

Photographs

Photographs
A port bow view of Vendetta apears in the 1960-61 and 1961-62 editions, a port bow view of Vampire in the 1959-60 to 1963-64 editions, a port quarter oblique surface view of Vendetta in the 1962-63 to 1964-65 editions, and a starboard bow oblique aerial view of Duchess in the 1964-65 edition.

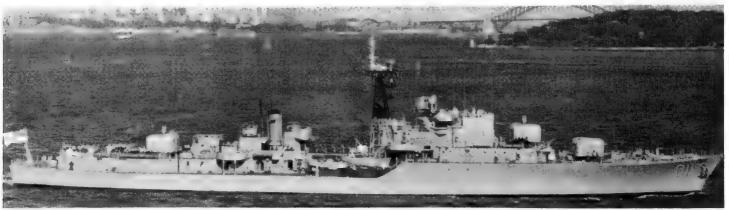
Class

Four ships were originally projected, to be named after the R.A.N.'s famous "Scrap Iron Flotilla" of destroyers which won renown in the Miditerranean on the Tobruk Ferry run and in other areas in the Second World War, but Waterhen was cancelled in 1954, and Voyager was lost in 1964.



DUCHESS

1965, Royal Australian Navy, Official



VAMPIRE

1964, courtesy J. C. Jeremy

Destroyers - contd.

2 "Battle" Class

Displacement:

Dimensions:

2,400 tons, standard (3,450 tons full load)
355 (pp.), 379 (o.a.)×41×13½ (mean) feet
4—4-5 inch, (only 2—4-5 inch in Anzac), 6—40 mm. AA.
10—21 inch (none in Anzac) Squid triple-barrelled depth charge mortar
Parsons geared turbines, 2 shafts, S.H.P.: 50,000=31 kts.
2 Admiralty 3-drum type Guns: A/S weapons:

Machinery: Boilers:

Complement:

Pennant No

Builders

Laid down

Launched Completed

Williamstown Naval Dockyard 23 Sep. 1946 Cockatoo Docks & Eng. Co. Pty. Ltd. 5 Aug. 1946 22 Mar. 1951 17 May 1950 20 Aug. 1948 20 Dec. 1947 D 59 ANZAC TOBRUK D 37

Ordered in 1945-46. Similar to the "Battle" class destroyers in the Royal Navy, but several alterations were incorporated, including sleeping accomodation for officers and men fore and aft, improved mess layout and other amenities, modern radar fire control, close range Staag armament (new type of twin 40 mm, Bofors gun mounting) and the latest anti-submarine weapons. Tobruk was placed in Reserve in 1960. Anzac became fleet training ship, with extra deckhouse aft and director removed. removed.

Gunnery

Anzac had the first "Daring" type of 4.5 inch guns and mountings of completely Australian manufacture (weight of each twin mount is approx. 50 tons). They are fully automatic, with a rate of fire of 25 rounds per minute, and an accurate range of over ten miles, firing a shell weighing 53 lb. The 4.5 inch guns for Tobruk were imported from Great Britain.

It was reported in 1966 that "B" turret in Anzac has been suppressed and replaced by a classroom for cadets.

been suppressed and replaced by a classroom for cadets.



ANZAC ("B" turret replaced by chartroom)

1966, Royal Australian Navy, Official



TOBRUK

Displacement:

Royal Australian Navy, Official

	"T	ri	Ьа	1"	CI	ass
--	----	----	----	----	----	-----

2,012 tons standard (2,700 tons

Dimensions:

2,012 tons standard (2,700 tons full load)
355½ (pp.), 377 (o.a.) ×36½×
13½ (mean) feet
4—47 inch. 2—4 inch, 8—40 Guns-

mm. AA. 4—21 inch

A/S weapons:

4—21 inch
Squid triple-barrelled depth
charge mortar
Parsons geared turbines S.H.P.:
44.000=32 kts. Machinery:

3 Admiralty 3-drum type 293 Boilers: Complement:

On modernisation, her deckhouse was extended aft. she was re-armed with different pattern guns and A/S weapons and reclassified as an anti-submarine destroyer.

Of this class, of originally three ships. Booton was declared for disposal in 1957, and has since been scrapped, and Warromungo was declared for disposal in 1962.

Pennant No. D 130

ARUNTA

Builders Cockatoo Docks & Eng. Co. Pty. Ltd.

Laid down 15 Nov. 1939 Launched

Completed

3 Mar. 1942 30 Nov. 1940



ARUNTA

Royal Australian Navy, Official

ANTI-SUBMARINE FRIGATES

6 Modified Type 12

2,100 tons standard (2,700 tons full load)
360 (pp.), 370 (o.a.)×41×123 (mean) feet
2—4.5 inch d.p.,
"Seacat" close range surface-to sir weapons Displacement: Dimensions:

Guns: Guided weapons

A/S weapons:

"Seacat" close range surface-to air weapons 2 three-barrclled depth charge mortars (1 lkara in Derwent and Stuort Geared turbines. 2 shafts. S.H.P.: 30,000=30 kts. 2 Babcock & Wilcox 250

Machinery: -

Boilers: Complement:

The design of Parramatta and Yarra is generally similar of that of the British Type 12 anti-submarine frigates, but it was modified by the Royal Australian Navy to incorporate improvements in equipment and habitability. The enclosed tower foremast differs from that in "Rothesay" class frigates in the Royal Navy.

Stuart was the first fitted with the Ikara anti-submarine guided missile, trial ship for the system. Derwent was the first R.A.N. ship to be fitted with "Seacat". Both ships are fitted with variable depth sonar.

sonar.

New Construction
The two new ships under construction, Swan and Torrens, laid down in Feb. and May 1965, respectively, were originally officially classed as Modified Type 12 Destroyer Escorts. (For about three months the flag supperior of Type 12 and Type 15 frigates was changed to DE Derwent and Stuart carried DE numbers for a while but reverted to F).

Name Pennant No. Builders Launched Completed F 22 F 05 F 21 F 07 Williamstown Naval Dockyard, Melbourne Cockatoo Island Dockyard, Sydney Cockatoo Island Dockyard, Sydney Williamstown Naval Dockyard, Melbourne Williamstown Naval Dockyard, Melbourne Cockatoo Island Dockyard, Sydney DERWENT PARRAMATTA 17 Apr. 31 Jan. 8 Apr. 30 Sep. STUART TORRENS



PARRAMATTA

1966, courtesy Mr. William H. Davis

Photographs of Parramatta appear in the 1961-62 to 1963-64 editions, of Yarra in the 1962-63 edition, of

Stuart in the 1963-64 to 1965-66 editions, and of Derwent in the 1964-65 and 1965-66 editions.



STUART

1966, courtesy Mr. John C. Jeremy

ANTI-SUBMARINE FRIGATES FAST

3 "Queenborough" Class (Fully Converted from Destroyers)

2,020 tons standard (2,700 tons Displacement: Dimensions:

2,020 tons standard (2,700 tons full load)
358½×35½×13½ (mean) feet
2—4 inch (twin-mount). 2—40 mm. Bofors AA.
2 Limbo three-barrelled depth charge mortars
Parsons geared turbines, 2 shafts.
5.H.P.: 40,000=31·25 kts.
2 Admiralty 3-drum type
220 (war)

A/S weapons:

Machinery:

Boilers: Complement:

Formerly in the Royal Navy. Lent to the Royal Australian Navy in 1943 (Quiberon, Quickmatch) and 1945 (Quadrant, Quality, Queenborough). Transferred permanently in June 1950 when it was announced they would be converted to fast anti-submarine frigates similar to the British Type 15, the conversions being effected at Cockatoo Island and Williamstown dockyard, but only four of the ships were reconstructed (Quality was not converted, see Recent Disposal note), Quadrant completed conversion and re-commissioned on 16 July 1953, (now discarded). Queenborough on 7 Dec. 1954 Quickmatch on 23 Sep. 1955, and Quiberon on 18 Dec. 1957. Photographs

Photographs A photograph of Quadrant appears in the 1954-55 to 1957-58 editions, of Quiberon in the 1958-59 and 1959-60 editions, and Quickmatch in the 1957-58 to 1961-62 editions. A larger photograph of Queenborough appears in the 1960-61 to 1964-65 editions.

Laid down 6 Nov. 40 14 Oct. 40 6 Feb. 41 Name QUEENBOROUGH QUIBERON QUICKMATCH Builders
Swan, Hunter & W. R. Ltd., Wallsend
J. Samuel White & Co. Ltd., Cowes
J. Samuel White & Co. Ltd., Cowes 02 03 04



1965, courtesy Mr. John C. Jeremy

Recent Dispsoals
Of the five ships of this class, Quality not converted from a destroyer into a fast anti-submarine frigate, was

declared for disposal in 1957, and Quadrant early in 1962. Quickmatch was paid off to reserve in Apr. 1963, Queenborough in June 1963, and Quiberon in 1964.

l Australian "Bay" Type

Displacement: 1,537 tons standard (2,187 tons Dimensions:

full load)
283 (p.p.), 301 (o.a.)×36½×
12½ (mean) feet
4—4 inch 5—40 mm. AA.
1 hedgehog. 4 D.C.T.
Triple expansion. 2 shafts. Guns: A/S weapons: Machinery: Triple expansion, 2 s I.H.P.: 5,500=19 kts, 2 Admiralty 3-drum type 177

Complement:

In operational reserve, Accommodation ship for H.M.A.S. Waterhen (base for minesweepers), Sydney,

Recent Disposals
Of three sister ships Condamine was officially declared for disposal in 1960, and Murchison and Shoalhaven early in 1962.

Pennant No. CULGOA A 256 (ex-F 408) (ex-Macquarie)

Builders Williamstown Naval Dockyard, Melbourne

Laid down 15 July 1943

Launched 22 Sep. 1945

Completed 17 Dec. 1946



CULGOA (before alteration to minesweeper depot ship)

1963, Royal Australian Navy, Official

3 Australian "River" Class

Displacement:

Dimensions:

1,489 tons standard, Barcoo 1,477 tons standard (2,200 tons full load)
283 (pp.), 301½ (o.a.)×36½×
12½ (mean) feet
1—40 mm. AA. (4 inch guns removed)
The 2 Squid triple-barrelled depth charge mortars in "B" A/S weapons:

removed)
The 2 Squid triple-bar
depth charge mortars in
position were removed
Triple expansion, 2 s
I.H.P.: 5,500=20 kts.
2 Admiralty 3-drum type
183 Machinery: Boilers:

Complement:

All are of "River" design. Barcoo, Diamantina and Gascoyne were converted in 1959-60 for survey and oceanographic research duties. The conversion included the provision of special laboratories and the fitting of Gascoyne with a helicopter platform. Lachlan, employed on surveying duties, is loaned to the Royal New Zealand Navy for hydrographic work and oceanographic research. Barcoo was paid off into reserve in Feb. 1964, and Gascoyne in Feb. 1966

Gunnery
Forward 4-inch gun was in "A" position with 40 mm, gun superimposed.

Recent Disposals
Of four sister ships Burdekin and Hawkesbury were officially declared for disposal in 1960, and Barwon and Macquarie early in 1962.

Disposals of "Swan" class frigates
Swan, latterly used as a cadet training ship, was paid
off in Nov. 1962 and put up for sale in Apr. 1964.
Warrego, recently employed on surveying service, was
paid off into reserve in Aug. 1963 and put up for sale
in Apr. 1965.

Ocean Minesweepers

Ocean Minesweepers

The last four ocean minesweepers of the "Bathurst" class were Castlemaine, immobile training ship at Flinders Naval Depot, Colac, now a tank cleaning vessel, Mildura and Wagga. These were survivors of a group of 32, four of which were given to New Zealand. For names and disposals of the remaining ships see 1961-62 edition.

Name
Pennant No.
Builders

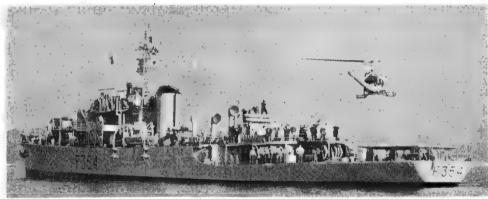
BARCOO
A 245 (ex-F 175) Cockatto Docks and Engineering Co.
DIAMANTINA A 266 (ex-F 377) Walkers Ltd., Maryborough. Queensland
GASCOYNE
A 276 (ex-F 354) Mort's Dock and Engineering Co., Sydney

Laid down Launched Completed 21 Oct. 42 26 Aug. 43 17 Jan. 44 12 Apr. 43 6 Apr. 44 27 Apr. 45 4 June 42 20 Feb. 43 20 Dec. 43



BARCOO

1963, Royal Australian Navy, Official



GASCOYNE (converted for survey, with helicopter platform)

1960, Royal Australian Navy, Official

MINESWEEPERS

6 "Ton" Class

CURLEW (ex-H.M.S. Chediston, ex-Montrose)
GULL (ex-H.M.S. Swanston)
HAWK (ex-H.M.S. Somerleyton, ex-Gamston)

IBIS (ex-H.M.S. Singleton)
SNIPE (ex-H.M.S. Alcaston)
TEAL (ex-H.M.S. Jackton)

Displacement: Dimensions: Guns: Machinery:

360 tons standard (425 tons full load) 140 (pp.),152 (o.a.) \times 28 $\frac{1}{4}\times$ 8 $\frac{1}{4}$ feet 2—40 mm. Bofors AA. Diesels. 2 shafts. B.H.P.: 3,000=15 kts. (max.) 3 officers, 2 ratings

Purchased from Britain in 1961, and modified in British doclyards to suit Australian conditions. Turned over to the Australian Navy, commissioned and re-named in Britain during summer 1962. Mirrlees diesels were replaced by Napier Deltic, air conditioned and fitted with stabilisers, Sailed from Portsmouth to Australia on 1 Oct. 1962. Constitute the 16th Mine Countermeasures Squadron.



HAWK

1963, Royal Australian Navy, Official

ESCORT MAINTENANCE

I New Construction STALWART

Displacement: Dimensions: Aircraft: Machinery:

15,000 tons
515½×67½ feet
1 helicopter
2 Scott-Sulzer 6-cylinder turbo-diesel engines. 2 shafts.

B.H.P.: 14,400 478 officers and ratings

Ordered from Cockatoo Docks & Eng. Co. Pty. Ltd. Sydney on 11 Sep. 1963 and laid down in June 1964 for completion in 1967. Designed to maintain destroyers and frigates and advanced weapons system, including guided missiles. She will have a helicopter flight deck and will be defensively armed. High She will have a helicostandard of habitability.



STALWART

1964, Royal Australian Navy, Official

20 New Construction

New Guinea

AITAPE LADAVA LAE MADANG SAMARAI Australia

ACUTE ARCHER ASSAIL BANDOLIER BAYONET ADROIT ADVANCE BOMBARD BUCCANEER ATTACK AWARE BARBETTE BARRICADE

> Dimensions: Length 100 feet 1-40 mm Guns: Paxman diesels 16 (2 officers, 14 men) Machinery: Complement:

Five patrol boats for the formation of the New Guinea coastal security force and fifteen for general duties are to be built. Steel construction. Builders: Evans Deakin & Co. Pty. Ltd., Brisbane, and Walkers Ltd., Maryborough. Delivery of the first vessel is scheduled for Aug.-Sep. 1966.

SEAWARD DEFENCE BOATS

3 HDML Type

SDB 1321 SDB 1324 SDB 1325

> 59 tons, standard (64 tons full load) officially Displacement:

Dimension:

tons, standard (64 whis full food) officially revised figures $80\frac{1}{4}$ (0.a.) $\times 16\frac{1}{4} \times 5\frac{1}{2}$ feet 1—40 mm. AA. 2 Buda diesels. 2 shafts. B.H.P.: 390 (max.)=11 kts. Guns: Machinery:

Complement: 12

Originally known as Harbour Defence Motor Launches (HDML) and afterwards as Seaward Defence Motor Launches (SDML). 1321 was modified with a two berth C.O.'s cabin added and covered bridge in place of an open bridge, SDML 1322 was stricken off in 1953. Remaining four were redesignated Seaward Defence Boats (SDB) in 1957. SDB 1327 was stricken from the list in 1960.



SDB 1321

Royal Australian Navy, Official

BOOM DEFENCE VESSELS

1 Trials Type

KIMBLA

750 tons standard (1,002 tons full load)
150 (p.p.), 179 (o.a.)×32×12 (mean) feet
1—40 mm, AA., 2—20 mm. AA.
Triple expansion, Oil fuel, 10 kts. Displacement; Dimension: Guns: Complement: 32

Built as a boom defence vessel by Walkers Ltd., Maryborough. Laid down on 4 Nov. 1953, Launched 23 Mar. 1955. Completed on 27 Mar. 1956. Converted to a Trials Vessel in 1959

2 "Kangaroo" Class

Pennant No. Name Laid down Launched Completed 15 Nov. 39 21 June 39 4 May 40 4 Nov. 39 KANGAROO 26 Sep. 40 7 Feb. 40 Displacement: 768 tons standard (971 tons full load) 150 (pp.), $178\frac{1}{7}$ (o.a.) $\times 32\frac{1}{7} \times 11\frac{1}{7}$ (mean) feet 1—40 mm. AA. Dimension: Guns: Triple expansion, 1.H.P.; 914=11 kts, Machinery: Boilers: Oil fuel: 51 tons Complement:

Similar to the "Bar" type boom defence vessels in the Royal Navy. Both in reserve. A photograph of Karangi appears in the 1957-58 edition.

of the "Kangaroo" class, Karangi was officially deleted from the list in 1965, ookaburra, of the Royal Navy "Net" type was also stricken in 1965.



1966, Royal Australian Navy, Official

SURVEY SHIPS

MORESBY

2,000 tons standard (2,500 tons full load) 284½ (p.p.), 314 (o.a.)×42 feet 2.—40 mm. Bofors AA. (single mountings) 1 Westland Scout helicopter Diesel-electric with twin screws. Speed Displacement: Dimensions: Guns: Aircraft: Machinery: Complement: twin screws. Speed 20 kts. 130 officers and ratings

The Royal Australian Navy's first specially designed survey ship. Built at the State Dockyard, Newcastle. New South Wales, at a cost of £A2,000,000. Launched on 7 Sep. 1963 and commissioned on 6 Mar. 1964. Fitted with the most modern hydrographic equipment.



MORESBY

1964, Australian Consolidated Press

PALUMA

340 tons (officially revised figures) $120\times24\times6\frac{1}{2}$ (mean) feet Diesel. Speed=9.5 kts. Displacement: Dimension: Machinery:

A motor stores lighter of war construction converted into a small survey vessel in 1958. Officially rated as a Survey Ship (Small).

FAST FLEET REPLENISHMENT SHIP

SUPPLY (ex-Tide Austral)

15,000 tons standard (26,000 tons full load)
17,600 tons deadweight, 11,200 tons gross
550 (\$p.), 583 (o.a.)×71×32 (max.) feet
6-40 mm. AA. (2 twin forward, 2 single aft)
Double reduction geared turbines. S.H.P.: 15,000=17 Displacement: Measurement: Dimensions: Guns: Machinery: 13 officers, 120 ratings Complement:

Built by Harland & Wolff, Ltd., Belfast, Launched, I Sep. 1954, completed March 1955. Sister ship of the British "Tide" Class Fast Fleet Replenishment Ships, Lent to Great Britain until Sep. 1962, when Tide Austral was re-named H.M.A.S. Supply and commissioned in the Royal Australian Navy (she was formerly a Royal Fleet Auxiliary) wearing the White Ensign and commanded and manned by R.A.N. personnel, at Portsmouth on 1 Sep. 1962, and sailed for Australia on 1 Oct. 1962.



SUPPLY

1963. Wright & Logan

The construction of a fast fleet replenishment ship with some provision for the carrying of oil fuel which was to have been begun in 1966-67 and completed in 1970 has been deferred.

GENERAL PURPOSE VESSELS

BASS Displacement: 234 tons standard (260 tons full load) 90 (pp.), 101 (o.a.) \times 22 \times 8 (mean) feet Diesel. Speed=10 kts. Dimensions: Machinery:

"Explorer" class. Of all steel construction, Banks was fitted for fishery surveillance and Bass for surveying, but both were transferred to other duties.

Disposals

The general purpose vessels GPV 957, GPV 958, GPV 961, GPV 962 (Walrus), CPV 968 (Taliarook) and Warreen, were officially deleted from the list in 1964.

FLEET TUGS

SPRIGHTLY

869 tons full load (officially revised figure)
143/34½×12½ (mean) feet
3—40 mm. AA.
2 diesels, 2 electric motors, B.H.P.; 4,000=12 kts.
170 tons Displacement: Dimension:

Guns: Machinery: Oil fuel: Complement: 43

Built at Orange Texas U.S.A. Laid down on 6 June 1942, launched on 7 Aug. 1942 and completed on 23 Nov. 1942. Engines controllable from bridge. To be converted as an interim submarine rescue vessel until the projected new submarine rescue vessel is completed about 1970.

BRONZEWING

EMU Displacement:

250 tons $98\frac{1}{4}~(o.o.)\times21\frac{1}{4}\times7\frac{1}{4}~(\textit{mean})~\text{feet}$ Diesel. 1 shaft. B.H.P.: 480=9.5 kts. Dimensions: Machinery:

Both built by Mort's Dock, Sydney. Launched on 2 Feb. 1946 and 25 June 1946, respectively. Emu in reserve.

BELGIUM

Administration

The Belgian Naval Force is attached to the Ministry of National Defence. Chief of Naval Staff: Commodore L.J.J. Lurquin

Naval, Military and Air Attaché in London: Colonel J. F. Biot.

Naval, Military and Air Attaché in Washington: Major General Count Alfred Cornet d'Elzius de Peissant.

Personnel

1966: 330 officers and 4,800 other ranks Mercantile Marine

Lloyd's Register of Shipping: 220 vessels of 831,976 tons gross

COASTAL ESCORTS

Name	Pennant No.	Builders	Laid down	Launched	Completed	Transferred
DE MOOR (ex-H.M.S. Rosario) G. LECOINTE (ex-H.M.C.S. Wallaceburg)	F 905 F 901	Harland & Wolff Ltd., Belfast Port Arthur Shipbuilding Co., Ontario	22 Sep. 1942 17 Mar. 1942	3 Apr. 1943 17 Dec. 1942	20 Aug. 1943 17 Mar. 1943	13 Jan. 1953 31 July 1959
0 E D	71					

2 Ex-British "Algerine" Class

1,040 tons standard (1,335 tons full lead)
212½ (p.p.), 221 (w.l.) 225 (c.a.) ×35½×11 feet Displacement: Dimensions:

Guns: A/S weapons:

5—40 mm. AA.
4 D.C.T., 2 D.C.R. (1 Hedgehog in G. LecoInte)
Geared turbines. (Triple expansion in G. LecoInte), 2 shafts.
S.H.P.: 2,000=16 kts. Machinery:

2. of 3-drum type 235 tons Boilers: Oil fuel; Radius: Complement: 235 tons 4,000 miles at 10 kts. 101

Formerly British ocean minesweepers. Officially re-classified as coastal escorts in 1959, De Moor is tropicalised, G. Lecointe (ex-Wallaceburg) was transferred from Canada at Sydney, Nova Scotia.

Sister ships A.F. Dufour (ex-H.M.C.S. Winnipeg) and De Brouwer (ex-H.M.C.S. Spanker) were officially stricken from the list in 1966.



DE MOOR

1966, Belgian Navy, Official

OCEAN MINESWEEPERS

Name	Pennant No	o. Builders	Laid down	Launched	Completed	Transferred
A.F. DUFOUR (ex-Lagen, M 950, ex-MSO		Bellingham Shipyard Inc., Wash.	1954	1955	27 Sep. 1955	Summer 1966
ARTEVELDE (ex-MSO 503, ex-AM 503)	M 907	Tacoma Boatbuilding Co., Tacoma, Wash.	1953	19 June 1954	15 Dec. 1955	15 Dec. 1955
BREYDEL (ex-MSO 504, ex-AM 504)	M 906	Tacoma Boatbuilding Co., Tacoma, Wash.	1954	25 Mar. 1955	15 Feb. 1956	15 Feb. 1956
DE BROUWER (ex-Namsen, M 951, ex-MSO	499) M 904	Bellingham Shipyard Inc., Wash.	1954	1955	1 Nov. 1955	Summer 1966
F. BOVESSE (ex-MSO 516, ex-AM 516)	M 909	Tampa Shipbuilding Co. Inc., Tampa, Fla.	1954	1956	25 Jan. 1957	25 Jan. 1957
G. TRUFFAUT (ex-MSO 515, ex-AM 515)		Tampa Shipbuilding Co. Inc., Tampa. Fla.	1955	1955	12 Oct. 1956	12 Oct. 1956
VAN HAVERBEKE (ex-MSO 522)		Petersen Builders Inc. Sturgeon Bay Wisc	2 Mar. 1959			

7 U.S. MSO (Ex-AM) Type 498

720 tons light (780 tons full load)
165 (w.l.), 172½ (o.a.)×35
×11 (max.) feet
1—40 mm. AA.
2 G.M. diesels. 2 shafts,
8.H.P.: 1,600=14 kts. (max.)
50 tons
2,400 miles ar 12 kts.
72 Displacement: Dimensions: Guns: Machinery: Oi! fuel: Range: Complement:

General
U.S. AM 498 class minesweepers. Wooden hulls and non-magnetic equipment. Capable of sweeping all modern mines of any type. Diesels of non-magnetic stainless steel alloy. Controllable pitch propellers.

Artevelde under the Delivery

Artevelde was transferred at Seattle, Wash., U.S.A. under the Mutual Defense Assistance Programme.

Breydel was also delivered at Seattle. Van Haverbeke berthed at Ostend on 2 May 1961, F. Bovesse in Sep. 1957, G. Truffaut in Aug. 1957, Breydel in Sep. 1956, and Artevelde in June 1956.

A.F. Dufors (ex-Lagen) and De Brouwer (ex-Namsen), handed over by the U.S.A. to the Royal Norwegian Navy on 27 Sep. and 1. Nov. 1955, respectively, were transferred to the Belgian Naval Force in 1966.



BREYDEL

1966, Wright & Logan

Ex-German Submarine Support Ship

EX-German Submarine Support Snip

RAMINA (ex-Royal Harold, ex-Herman von Wissmann)

Displacement: 3,900 tons standard (5,750 tons full load)

Dimensions: 344½ (pp.), 374 (o.g.) × 48½ × 18½ feet

Guns: 1-3 inch, 1-40 mm. AA., 2-50 twin AA.

Machinery: 1 B. & W. Diesel. 1 shaft.

B.H.P.: 3,600=15 kts. (cruising) 10,000 miles at economical speed

Complement: 175 plus billets for 250 men training at sea.

Buils in 1940 at Hobelen Antwern by J. Cockerillet

training at sea.

Built in 1940 at Hoboken, Antwerp, by J. Cockerill for Poland. Seized by German authorities and used as submarine support ship in Norwegian waters. Transferred to British authorities in 1945, and finally returned to Belgium in Oct. 1950. Pennant No. A 957 (ex-AP 907.) Operational as Troop Transport until 1960, Re-rated Command and Logistical Support Ship for minesweepers (and Training Ship) early in 1962.

SUPPORT SHIPS



KAMINA

1966, Skyfotos

Support Ships — contd.

New Construction

A 961

1,800 tons light (2,600 tons full load)
309 (w.l.), 326 (o.a.),×46×12 (max.) feet
3—40 mm, AA. (single)
2 Cockerill diesels. 1 shaft.
B.H.P.: 5,000=19 kts. (max.)
10,000 miles at over 15 kts.
(range at economical speed with one engine) Displacement: Dimensions: Guns:

Machinery: Radius:

Complement:

Scheduled to be laid down at Hoboken by J. Cockerill at the end of 1966. Controllable pitch propeller. Design includes a platform and a hangar for one light liaison-helicopter.

New Construction

GODETIA

1,700 tons light (2,300 tons full load)
289 (w.l.), 301 (o.a.), ×46×11½ feet
4—40 mm (2 twin) AA.
4 ACEC—MAN diesels. 2 shafts. B.H.P.: 5,400=19 Displacement; Dimensions:

Machinery:

kts. (max.) 6,000 miles at 15 kts. (range at economical speed with two engines)
100 plus 35 spare billets Radius:

Complement:

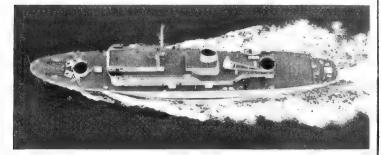
General

Built at Temse by J. Boel and Sons. Laid down on 15 Feb. 1965, launched on 7 Dec. 1965 and completed on 2 June 1966. Controllable pitch propellers. Provided with a platform which cam take a light liaison-helicopter, and has Royal Apartments. Pennant number allocated: A 960. Rated as Logistic Support and Command Ship.



GODETIA

1966, Skyfotos



GODETIA

1966, Skyfotos

Ex-British Ocean Minesweeper

ADRIEN DE GERLACHE (ex-H.M.S. Liberty)

1.040 tons standard (1,335 tons full load)
212\frac{1}{2} (p.p.), 221 (w.l.), 225 (o.a.), \times 35\frac{1}{2}\times 11 feet
2—40 mm. AA.
Geared turbines. 2 shafts, S.H.P.: 2,000 at 16 kts.
2 of 3-drum type Displacement: Dimensions: Guns: Machinery: Boilers:

Former British ocean minesweeper of the "Algerine" class, subsequently re-classified as a coastal escort and again re-rated as a Command and Logistic Support Ship for Minesweepers in 1960. Built by Harland & Wolff, Laid down on 27 Nov. 1943, launched on 22 Aug. 1944, and completed on 18 Jan. 1945. Trans-ferred from Royal Navy to Bergian Navy on 27 Nov. 1949.



ADRIEN DE GERLACHE

1966, Belgian Navy, Official

COASTAL MINESWEEPERS

(Dragueurs de Mines Cotiers)

23 U.S. MSC (ex-AMS) Type 60

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M 912 LIER (ex-MSC 63)
M 913 MAASEIK (ex-MSC 78)
M 922 MALMEDY (ex-MSC 154)
M 926 MECHELEN
M 930 ROCHEFORT
M 930 ST. NIKLAAS (ex-MSC 64)
M 919 ST. TRUIDEN (ex-MSC 169)
M 927 SPA
M 928 STAYELOT
M 934 VERVIERS (ex-MSC 259)
M 935 VEURNE (ex-MSC 260)
923 BLANKENBERGE (ex-MSC 170)
917 CHARLEROI (ex-MSC 152)
925 DE PANNE (ex-MSC 131)
910 DIEST (ex-MSC 77)
920 DIKSMUIDE (ex-MSC 65)
911 EEKLO (ex-MSC 101)
929 HEIST
921 HERVE (ex-MSC 153)
1931 KNOKKE
933 KOKSIJDE
1924 LAROCHE (ex-MSC 171)
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330 tons light (390 tons full load)
139 (p.p.), 144 (o.a.) ×27½×7½ (8 max.) feet
1—40 mm. AA.
2 G.M. Diesels. 2 shafts. B.H.P.: 880=13.5 kts. Dimensions: Guns: Machinery: Oil Fuel: 28 tons 2,700 miles at economical speed (10.5 kts.)

Range: Complement:

Motor minesweepers with wooden hulls and constructed throughout of ma-Motor minesweepers with wooder hulls and constructed throughout of materials with the lowest possible magnetic attraction to attain the greatest possible safety factor when sweeping for magnetic mines. M 910-925, 934 and 935 were built in U.S.A., under MDAP, and M 926-933 of same type were built in Belgium under MAP with machinery and equipment from U.S.A. M 910 (ex-MSC 77, ex-AMS 77) turned over 12 May 1953, at Boston, M 919 (ex-MSC 169 ex-AMS 169) turned over 25 Feb. 1954, at New York Naval Shipyard, Brooklyn. M 925 (ex-MSC 131, ex-AMS 131) transferred 28 Oct. 1955, M 934 (ex-MSC 259) turned over 19 June 1956. M 935 (ex-MSC 260) was transferred on 7 Sep. 1956. M 926 to 933 were all laid down in 1953-54 and launched and completed in 1954-55. M 936. Merchen, is actually used as a research ship. 55. M 926, Mechelen, is actually used as a research ship.

Transfers
M 914, Roeseage (ex-MSC 103), M 915, Arlon (ex-MSC 104) and M 916,
Bastogne (ex-MSC 151) were transferred to the Royal Norwegian Navy in summer 1966 by the Belgiam Naval Force.

Disposal The research ship Eupon (ex-Euroka, ex-BYMS 11, Ex-Young Joe), former coastal minesweeper, was officially deleted from the list in 1964 as she had become obsolete.



HEIST

1966, courtesy Godfrey H. Walker, Esq.



BASTOGNE

1965, Giorgio Ghiglione



ROCHEFORT

(Dragueurs de Mines de Petits Fonds) 16 MSI "Herstal" Class

485 ANDENNE (ex-MSI 97) May 1958 M 477 OUDENAERDE May 1958 484 DINANT (ex-MSI 96) 5 Apr. 1958 M 483 OUGREE (ex-MSI 95) 16 Nov. 471 HASSELT 17 Nov. 1956 M 480 SERAING (ex-MS/ 92) 16 Mar. 1957 (ex-MSI 90) 6 Aug. 1956 M 479 HUY (ex-MSI 91) 17 Nov. 1956 M 472 KORTRIJK 16 Mar. 1957 M 473 LOKEREN 18 May 1957 M 474 MARGARA

M 470 TEMSE 6 Aug. 1956 M 475 TONGEREN 16 Nov. 1957 M 481 TOURNAI (ex-MSI 93) 18 May 1957 M 474 TURNHOUT 7 Sep. 1957 M 482 VISE (ex-MSI 94) 7 Sep. 1957

160 tons light (190 tons full load) $106\frac{1}{3}~(p.p.),~113\frac{1}{5}~(o.a.)~\times 22\frac{1}{3}\times 6~(7~max.)~fect$ 1—-50. AA. Displacement: Dimensions: Guns: 2 diesels, 2 shafts. B.H.P.: 1,260=15 kts. (max.)

Machinery: Oil fuel: Range: Complement: 18 tons 2,300 miles at 10 kts.

M 476 MERKSEM 5 Apr. 1958

MS1 type. Modified AMI "100-foot" class. All build in Belgium. The first four MS1 were launched in 1956. Herstal and Temse were both launched at the Merchantile Marine Yard, Kruibche, on 6 Aug. 1956, followed by another pair in 1956, and four more pairs in 1957 (see launch dates above). Herstal was completed in June 1957. The first group of eight (M 478 to 485) was a United States "off shore order," the remaining eight (M 470 to 477) being financed under the Belgian Navy Estimates.

Photographs
A photograph of Kortrijk appears in the 1959-60 to 1964-65 editions.



ANDENNE

1966, Belgian Navy, Official



TONGEREN

1964. Belgian Navy, Official



SERAING

1963, Belgian Navy, Official

AUXILIARY CRAFT

Harbour Craft

There are three barges, namely FN 4, FN 5, and FN 6, displacement 300 tons, length 105 feet, built in the Netherlands; the ammunition ship Ekster, displacement 140 tons, length 118 feet, built in Belgium in 1953; two diving cutters, ZM 3 and ZM 4, displacement 8 tons, length 33 feet, built in Belgium in 1953; and the harbour transport cutter Spin, displacement 32 tons, length 47½ feet, with 250 B.H.P. diesels = 8 kts. and Voith-Schneider propeller, built in the Netherlands in 1958. Harbour Craft 250 B.H.P. diesels Netherlands in 1958.

RIVER PATROL BOATS (Vedettes Fluviales)

HZER LEIE LIBERATION

25 tons light (27.5 tons full load) 75\(\text{ (pp.).} \) 82 (o.a.) \times 12\(\frac{1}{2}\times 3\) feet (Liberation 85\(\frac{1}{2}\times 3\) feet) 2—.50 M.G. diesels. 2 shafts. B.H.P.: 440=19 kts. 7 Displacement: Dimensions:

Guns: Machinery: Complement:

Built at the Theodor Shipyards of Regensburg, Germany, in 1953, except Liberation, in 1954.

Disposals

The river patrol boats Dender, Ourthe and Rupel were officially deleted from the list in 1965.



SAMBRE

1966, Belgian Navy, Official

RESEARCH SHIP (Bâtiment d'Études)

ZENOBE GRAMME

149 tons 92/76 \times 22 $\frac{1}{7}$ \times 7 feet 1 MWM diesel. I shaft. B.H.P.: 200=10 kts. 14 Displacement: Dimensions: Machinery: Complement:

Sailing ship, built by J. Boel in Temse, Belgium, in 1961. Designed for scientific research. Pennant No. A 958.



ZENOBE GRAMME

1966, Belgian Navy, Official

TUGS (Remorqueurs)

SUB-LIEUTENANT VALCKE

110 tons
78½ (pp.); 95 (o.d.) × 21 × 5½ feet
1 diesel. 1 shaft. B.H.P.: 600=12 kts.
14 Displacement:
Dimensions:
Machinery:
Complement:

General
Built in Haarlem, Netherlands in 1951. Pennant No. A 950.

There are also two port tugs, Bij and Krekel, displacement 71 tons, length 57½ feet. 2 Voith-Schneider propellers, 400 H.P.: three harbour tugs, Hommel and Wesp, displacement 22 tons, length 43 feet, with 300 B.H.P. diesels and Voith-Schneider propellers, Built in Germany in 1953, and Mier, displacement 17.5 tons, length 41 feet, with 80 B.H.P. diesels and Voith-Schneider propellers, built in Belgium in 1962.



SUB-LIEUTENANT VALCKE

1966, courtesy Godfrey H. Walker, Esq.

BRAZIL

Administration

Minister of the Navy:
Admiral Zilmar Campos de Araripe
Macedo

Chief of Naval Staff: Admiral Arnoldo Toscano Naval Attaché in London: Captain Antonio Avila de Malafaia

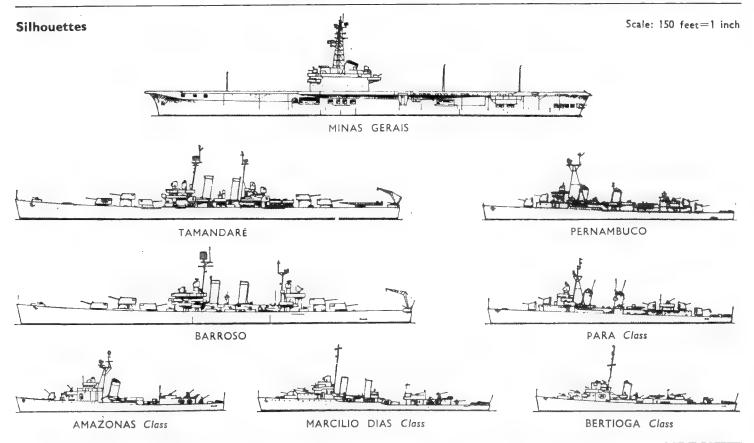
Naval Attaché in Washington: Rear Admiral Joao Baptiste Francisconi Serran

Personnel

1966: 3,000 officers and 50,000 men including Marines

Mercantile Marine

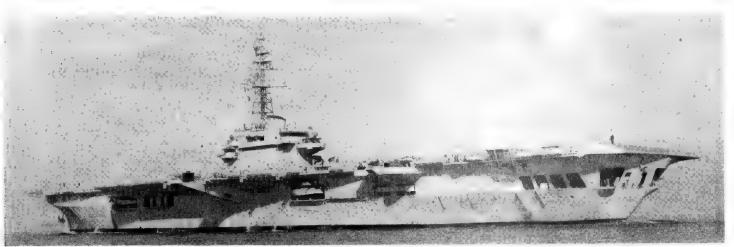
Lloyd's Register of Shipping: 397 vessels of 1,252,968 tons gross





MINAS GERAIS (starboard broadside view)

1962, Brazilian Navy, Official



MINAS GERAIS (port quarter view) see next page

1961, Wright & Logan

AIRCRAFT CARRIER (NAel)

MINAS GERAIS (ex-H.M.S. Vengeance) Pennant No.:

Builders: Swan, Hunter & Wigham Ri-chardson, Ltd., Wallsend-on-Tyne Swan.

Laid down: 16 Nov. 1942

Launched: 23 Feb. 1944

Completed: 15 Jan. 1945

Reconstructed: Verolme Dock, Rotterdam, 1957-60

I Ex-British Type ("Colossus" Class)

Displacement: 15,890 tons standard, 17,500 tons normal (19,890 tons full load) (see Displacement note)

Length: 630 (pp.), 695 (o.a.) feet, Beam: 80 feet. Width: 121 (o.a.) feet (as reconstructed).

Draught: 21½ (mean) 23½ (max.) feet-Flight deck, 690 feet long, 80 feet wide, 39 feet above water line.

Guns: 10—40 mm. AA (2 quadruple, 1 twin), 2—47 mm. (saluting)

Aircraft: 21 capacity

Aircraft: 21 capacity steam

Catapult:

Machinery:

1 steam
Parsons geared turbines. 2 shafts
S.H.P.: 40,000=25 kts. (24.25
kts. sea speed) 25.3 kts on trials
after reconstruction (see Engineering note)
4 Admiralty 3-drum type (400
lb. working pressure, 700 degrees maximum superheat)
3,200 tons
12,000 miles at 14 kts.: 6,200
miles at 23 kts.
1,000 (1,300 with air group on
board)

Boilers:

Oil fuel: Radius:

Complement:

General

General
Served in British Navy from 1945 onwards, Fitted out in late 1948-early 1949 for experimental cruise to Arctic. Lent to the Royal Australian Navy early in 1953, but was returned to the Royal Navy in August 1955. British Admiralty announced on 14 Dec. 1956 the purchase of Vengeance by the Brazilian Government. Reconstructed at Verolme Dock, Rotterdam (Verolme United Shipyards' Rosenberg yard) from summer 1957 to Dec. 1960. The conversion and overhaul included the installation of the angled deck, steam catapult, mirror sight deck landing system, and complete armament fire control and radar equipment. The ship, was purchased for \$9,000,000 and the reconstruction cost \$27,000,000. Commissioned in Brazilian Navy at Rotterdam on 6 Dec. Commissioned in Brazilian Navy at Rotterdam or 6 Dec. 1960, Left Rotterdam for Rio de Janerio on her maiden voyage as Minas Gerais on 13 Jan. 1961. Used primarily for anti-submarine warfare aircraft and helicopters. Displacement

The displacement before reconstruction was 13,190 tons standard and 18,010 tons full load.

MINAS GERAIS

Engineering

Engineering
Engines and boilers are arranged en echelon, the two propelling machinery spaces having one set of turbines and two boilers installed side by side in each space, on the unit system, so that the starboard propeller shaft is longer than the port shaft. Maximum speed is 25 knots at 120 revolutions per minute. Boiler capacity was increased when boilers were retubed during reconstruction in 1957-60.

Flectrical

During reconstruction a complete alternating current system was built into the ship, and a total of 2,500 kW supplied by four turbo-generators and one diesel gen-

Construction

Demage control: No great measure of vertical sub-division on the sandwich system as it was reckoned that it is better for ships to settle evenly in the event of damage and flooding than to foster capsizing. Insulated for tropical service and partially air-

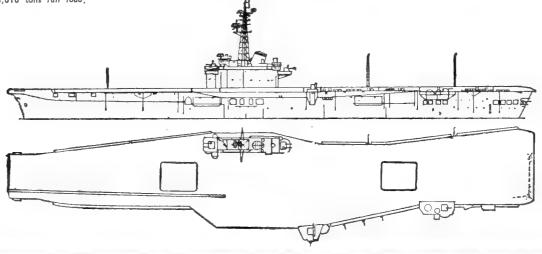
1966, Brazilian Navy, Official

Operational
Arrester wires to take 20,000 lb, aircraft up to 60 knots. Single track catapult for launching 20,000 lb, aircraft at 60 knots. Catapult accelerator gear port side forward. Flight deck originally designed for 14,000 lb, aircraft reinforced to take 20,000 lb, machines.

Hangar Dimensions of hangar are: Length, 445 feet; width, 52 feet; clear depth, $17\frac{1}{2}$ feet. Dimensions of aircraft lifts were: 45 feet by 34 feet. During reconstruction in 1957-60 new aircraft lifts replaced the original units.

Photographs
Photographs of this ship before reconstruction appear
in the 1957-58 edition (port bow aerial view and starboard bow aerial view) and in the 1958-59 to 1960-61
editions (starboard bow oblique aerial view and starboard broadside view).

Drawing Port elevation and plan. Scale: 128 feet=1 inch.





2 Ex-U.S. "Balao" Class

BAHIA (ex-U.S.S. Plaice, SS 390)
RIO GRANDE DO SUL (ex-U.S.S. Sand Lance, SS 381, ex-Orca, ex-Orjanco)
Displacement:

1,526 tons standard, 1,816 tons surface (2,400 tons submerged)
Dimensions:
Tubes:

10—21 inch (6 bow, 4 stern),
24 tornedoes

Machinery:

10—21 inch (6 bow, 4 stern), 24 torpedoes Fairbanks-Morse 2-stroke diesels B.H.P.: 6,500=20 kts. (surface) S.H.P.: 5,500=10 kts. (submerged) 300 tons 12,000 miles at 10 kts.

Oil fuel: Radius:

Former U.S. submarines of the "Balao" class loaned to Brazil for five years under the Military Assistance Programme after completion of overhaul at the Pearl Harbour Naval Shipyard in Sep. 1963.

SUBMARINES (Submarinos) (SE)

Pennant Nos.:

Builders: Portsmouth Naval Shipyard Portsmouth Naval Shipyard

Launched: 15 Nov. 1943 25 June 1943

Completed 12 Feb. 1944 9 Oct. 1943



BAHIA

1966, Brazilian Navy, Official

2 Ex-U.S. "Gato" Class

HUMAITA (ex-U.S.S. Muskallunge SS 262) RIACHUELO (ex-U.S.S. Paddle SS 263)

Displacement: Dimensions:

1,525 tons standard, 1,816 tons

Machinery:

1,525 tons standard, 1,816 tons surface (2,425 tons submerged)
311\frac{3}{4}\times 27\times 17 feet
10\times 21 inch (6 bow, 4 stern)
G.M. 2-stroke diesels, B.H.P.:
6,500\times 21 kts. (surface); Allis
Chalmers electric motors: H.P.:
2,750\times 10 kts. (submerged).
85

Complement:

Former U.S. submarines of the "Gato" Class loaned to Brazil for five years under the Mutual Defense Assistance Programme, after completion of overhaul at the Philadelphia Naval Shipyard in Jan. 1957. Have two engine rooms to reduce size of compartments. A photograph of Humaitá appears in the 1960-61, 1961-62, 1964-65 and 1965-66 editions.

Builders: Launched: Completed: Laid down: Pennant Nos.: 7 Apr. 1942 1 May 1942 13 Dec. 1942 30 Dec. 1942 15 Mar. 1943 29 Mar. 1943 Electric Boat Co. S 15 Electric Boat Co.



RIACHUELO

1962, Brazilian Navy, Officiai

CRUISERS (CL)

Pennant No.:

TAMANDARÉ (ex-U.S.S. St. Louis, CL 49) C 12

Builders: Newport News S.B. & D.D. Co.

Laid down: 10 Dec. 1936

Launched: 15 Apr. 1938

Completed: 10 Dec. 1939

Displacement:

Dimensions:

10,000 tons standard, 13,500 tons full load Length: 608½ feet (o.a.) Bèam: 69 feet. Draught: 24 (max.)

Guns: Aircraft: Armour: 69 feet. Draught: 24 (max.) feet 15—6 inch, 47 cal., 8—5 inch, 38 cal. (twin dual purpose), 28 4 40 mm. AA., 8—20 mm. AA. 1 helicopter (see Hangar notes) 5—13" belt. 3"+2" decks, 5"—3" turrers, 8" C.T: Westinghouse geared turbines. 4 shafts. S.H.P.: 100,000=32.5 kts.

Machinery:

shafts. S.H.P.: 100,000=32-5 kts.

8 Babcock & Wilcox Express type (boiler pressure is higher than in Barroso)
2,100 tons
14,500 miles at 15 kts.
975

Oil fuel:

Boilers:

Radius: Complement:

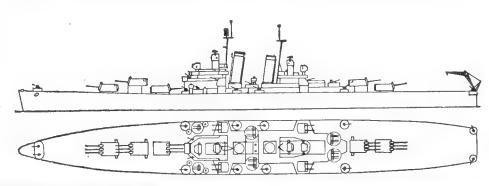
General "St. Louis" class. Purchased from the United States, with the Barroso (transferred on 29 Jan. 1951) Tamandaré differs from Barroso in having her 5-inch guns mounted in pairs in roomy gunhouses on high bases, a different scheme of boat stowage, a small tripod mast immediately abaft second funnel, and after gunnery control arrangements redistributed.

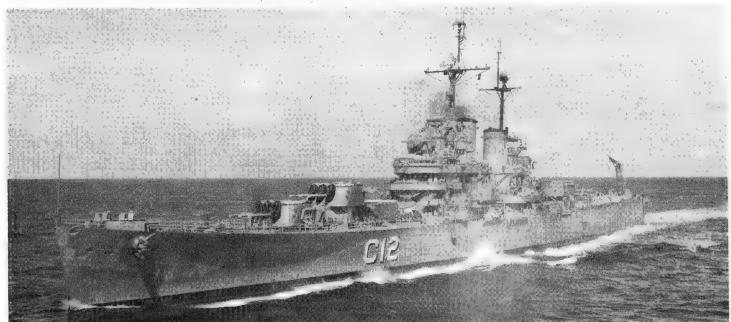
Hongar

The hangar in the hull right aft could originally accommodate 6 aircraft if necessary together with engine spares and duplicate parts, though 4 aircraft was the normal capacity. The incorporation of this hangar resulted in a very wide and nearly flat counter and high freeboard aft and also gave the after guns higher com-

mand. Above the hangar two catapults were mounted as far outboard as possible, and a revolving crane was placed at the stern extremity overhanging the aircraft hatch.

Drawing
Port elevation and plan. Scale: 128 feet=1 inch.





TAMANDARÉ

1963, Brazilian Navy, Official

Completed:

28 July 1938

Cruisers -contd. Auilders: Philadelphia Navy Yard

BARROSO (ex-U.S.S. Philadelphia, CL 41) C 11 9.700 tons stundard, 13.000 tons Displacement:

9.700 fors standard, 13.000 tons full load Length: 600 (w.l.), 608 (o.a.) feet. Beam: 69 feet (with bulges) Draught: 191 (mean), 24 (max.) feet 15—6 inch; 47 cal.: 8—5 inch, Dimensions:

Pennant No.:

reet 15—6 inch; 47 cal.; 8—5 inch, 38 cal. (single mountings); 28— 40 mm. AA.; 20—20 mm. AA. 1 helicopter (see *Hangar* notes Guns:

Aircraft: Armour:

Machinery:

sharts. S.H.P.: 100,000=32.5 kts. 8 Babcock & Wilcox Express type 2,100 tons 14,500 miles at 15 kts. 888 Boilers: Oil fuel: Radius: Complement:

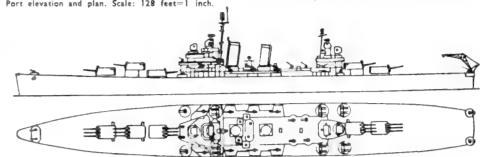
General "Brooklyn" class Purchased from the United States in 1951. Originally two catapults were mounted on the quarter deck for launching the aircraft (see Hangar

Laid down: 28 May 1935 Notes under Tamandaré). After initial completion the superstructure was reduced, bulges were added and the beam increased. Commissioned in the Brazilian Navy on 21 Aug. 1951.

Drawing
Port elevation and plan. Scale: 128 feet=1 inch

1935
Class Sisters
Originally a sister ship of General Belgrano (ex-17 de Octubre, ex-U.S.S. Phoenix) and Nueve de Julio, ex-U.S.S. Boise) in the Argentine Navy, and O'Higgins (ex-U.S.S. Brooklyn) and Prat (ex-U.S.S. Nashville) in the Chilean Navy.

Launched: 17 Nov. 1936





Brazilian Navy, Official

(Contratorpedeiros) (CT) DESTROYERS

4 British Design. "Amazonas" Class

BARROSO

Name Completed Laid down Launched 28 Dec. 40 20 July 40 20 July 40 28 Dec. 40 30 May 45 10 Dec. 51 29 Nov. 43 10 Nov. 49 24 Nov. 43 3 Sep. 49 14 July 46 23 June 51 ACRE AMAZONAS ARAGUAIA ARAGUARI

1.450 tons standard (1.800 tons full load)
323 (o.a.)×35×9 (max.) feet
3—5 inch, 36 cal., 4—40 mm.
AA. (two twin), 2—20 mm.
4 D.C.T.
6—21 inch (two triple)
Parsons geared turbines. S.H.P.;
34,000—34 kts.
3, of 3-drum type
150 tons
200 Displacement: Dimensions: Guns:

A/S weapons: Tubes: Machinery:

Boilers: Oil fuel: Complement:

General All built by Ilha das Cobras, Rio de Janeiro, to a British design. All named after rivers. Designated CT. Refitted with tripod mast. Pennant Nos. changed from A4. A1, A5, and A2, respectively, to D 10, D 12, D 14 and D 15.

Photographs photograph of Ajuricaba appears in the 1962-63 A ph edition.

Of this class, Ajuricaba, D 11, and Apa, D 13, were officially removed from the list in 1964.



1963, Brazilian Navy. Official **AMAZONAS**

"Marcilio Dias" Class

Name No. Launched Completed 28 Dec. 40 1944 D 26 MARIZ E BARROS

1,500 tons standard (2,200 tons Displacement: Dimensions:

Guns:

1,500 tons standard (2,200 tons full load)
341 (pp.), 360 (o.a.)×35×12 (max.) feet
4—5 inch, 38 cal. (d.p.), 2—40 mm. AA., 6—20 mm. AA.
4—21 inch (quadrupled)
G.E. geared turbines, S.H.P.:
42,800=36·5 kts.
4 high-pressure watertube of Express type by Babcock & Wilcox
550 tons
6,000 miles Machinery: Boilers:

Oil fuel: 6,000 miles 210 Radius: Complement:

General

General
U.S. design but built at Ilha das Cobras, Rio de Janeiro, with material from U.S. Generally similar to U.S. destroyers and armed with U.S. guns. Laid down in 1937 and commissioned on 29 Nov., 1943. Designated CT. Pennant No. changed from M 2.

Guided Weatons

It was officially stated in 1966 that Mariz e Barros will be refitted for the installation of British "Seacat" guided missile (aunchers.

Disposals
Sister ships Greenhalgh, D 24, and Marcillo Dias, D 25, were officially deleted from the list in 1966.



MARCILIO DIAS

1960, Brazilian Navy, Official

Name	No.
PARA (ex-U.S.S. Guest, DD 472) PARAIBA (ex-U.S.S. Bennett, DD 473) PARANA (ex-U.S.S. Cushing, DD 797) PERNAMBUCO (ex-U.S.S. Hailey, DD 556)	D 27 D 28 D 29 D 30

Ex-U.S. "Fletcher" Type. "Para" Class

2.100 tons standard (3.050 tons full load) $376\frac{1}{2}$ (o.a.)×39 $\frac{1}{3}$ ×18 (max.) Dimensions: Pará: 5-5 inch, 38 cal. d.p., 6

Pará: 5—5 inch, 38 cal, d.p., 6
40 mm. (3 twin): Paraiba,
Parana: 5—5 inch, 38 cal, d.p.,
10—40 mm. AA. (2 quadruple,
1 twin): Pernambuco: 4—5
inch, 38 cal, d.p., 6—3 inch,
50 cal. AA. (3 twin)
2 Hedgehogs, 1 D.C. rack,
2 side-launching torpedo racks, 2
fixed Hedgehogs
2 sets G.E. geared turbines 2
shafts. S.H.P.: 60,000=35 kts.
4 Baboock & Wilcox

A/S weapons:

Machinery:

Boilers: Oil fuel: Radius: Complement: 4 Babcock & Wilcox 650 tons 6,000 miles at 15 kts. 262 (15 officers, 247 m

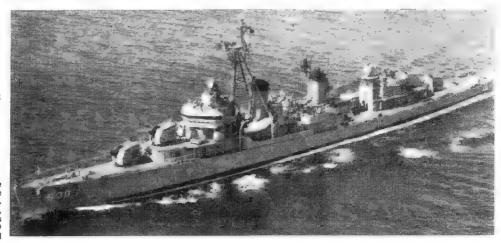
General Former United States destroyers. Cushing is of the Iater "Fletcher" class and the other three are of the "Fletcher" class (see particulars in the U.S.A. section). Acquired from the United States on Ioan for five years, under the Military Aid Programme in 1959. Guest was transferred to the Government of Brazil on 5 June 1959 and renamed Para, Bennett was transferred to Brazil on 15 Dec. 1959 at Bremerton, Washington, and renamed Paralba, Cushing and Halley were transferred to

Destroyers - contd.

Builders	Laid down	Launched	Completed	
Boston Navy Yard	27 Sep. 1941	20 Feb. 1942	15 Dec. 1942	
Boston Navy Yard	10 Dec. 1941	16 Apr. 1942	9 Feb. 1943	
Bethlehem Steel Co. (Staten Island)	3 May 1943	30 Sep. 1943	17 Jan. 1944	
Seattle-Tacoma S.B. (Corpn., Seattle)	11 Apr. 1942	9 Mar. 1943	30 Sep. 1943	

Brazil on 20 July 1961, at Norfolk Naval Shipyard, Photographs
Portsmouth, Virginia, and re-named Parana and Pernambuco, respectively.

A photograph of Pará (five 5-inch guns) appears in the 1960-61 and 1962-63 editions.



PERNAMBUCO (four 5-inch guns)

1962, Brazilian Navy, Official

FRIGATES (Destroyer Escorts) (Officially rated as Avisos Oceanicos)

6 Ex-U.S. DE Type. "Bertioga" Class

1,240 tons standard (1,900 tons full load)
306 (o.a.)×37×12 feet
3—3 inch (dual purpose), 2—40 mm., 4—20 mm.
3—21 inch
Diesel-electric drive, 4 G.E. diesels and 2 electric motors.
2 shafts. S.H.P.: 6,000=19 kts.
300 tons
11,500 miles at 11 kts.
200 Displacement: Dimensions: Guns:

Machinery: Oil fuel:

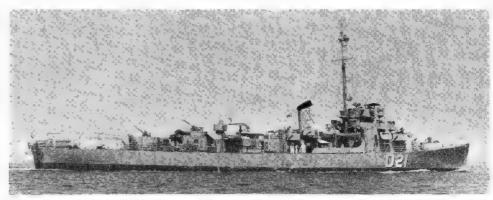
Radius: Complement:

General
Former United States destroyer escorts of the
"Bostwick" class. Built by Dravo, Wilmington, Del.
(Baependi) and Federal, Port Newark (other five).
Transferred from the U.S. Navy in 1944: Pennant Nos.
changed from BE 5, 4, 2. 6, 8, 3, respectively, to
D17, D18, D19, D20, D22 and D23. Formerly designated CTE (Destroyer Escorts) but reclassified as Avisos
Oceanicos in 1965.

Photographs
A photograph of Babitonga, D 16, appears in the 1960-61 and 1961-62 editions, and a photograph of Bocalna, D 22, in the 1962-63 edition.

Disposals
Of this class, Babitonga, D 16, and Bertioga, D 21, were officially removed from the list in 1964.

Pennant No. Laid down Launched Completed 1942 25 May 1943 22 Aug. 1943 5 Sep. 1942 June 1943 8 Aug. 1943 5 Sep. BAEPENDI (ex-U.S.S. Cannon, DE 99)
BAURU (ex-U.S.S. Reybold, DE 177)
BEBERIBE (ex-U.S.S. Herzog, DE 178)
BENEVENTE (ex-U.S.S. Christopher, DE 100)
BOCAINA (ex-U.S.S. Marts, DE 174)
BRACUI (ex-U.S.S. McAnn, DE 179) 14 Nov. 17 May 17 May 7 Dec. 26 Apr. 3 May 1943 26 Sep. 1943 11 Oct. 1943 6 Oct. 1943 23 Oct 1943 3 Sep. 1943 24 Sep. 1943 1943 1943 D 17 D 18 D 19 D 20 D 22 D 23



Brazilian Novy, Official

COASTAL MINESWEEPERS (NV)

BERTIOGA

4 Ex-U.S. MSCo Type. "Javari" Class

JAVARI (ex-U.S.S. Cardinal, MSCo 4) JURUA (ex-U.S.S. Jackdaw, MSCo 21) JURUENA (ex-U.S.S. Grackle, MSCo 13) JUTAI (ex-U.S.S. Egret, MSCo 46)

270 tons standard (350 tons full load) $136\times24_1\times8$ (max.) feet 4-20 mm. in two twin mountings 2 D.C.T. 2 G.M. diesels. 2 shafts. B.H.P.: 1,000=15 kts. 16 tons 2,300 miles at economical speed 50 Displacement: Dimensions: Guns:
A/S weapons:
Machinery:
Oil fuel:
Radius:
Complement:

General
Coastal motor minesweepers of wooden construction. All launched in 1942-43.
Formerly known as Auxiliary Motor Minesweepers (AMS), Reclassified as Minesweepers, Coastal (old), MSC (o), in Feb. 1955. Cardinal and Egret were transferred to the Brazilian Navy by the United States Navy at Charleston Naval Shipyard on 15 Aug. 1960 under the Mutual Defense Assistance Program as the nucleus of a Brazilian mine force, and renamed after Brazilian rivers. Pennant Nos. M 11 and M 12, respectively. Used for patrol and escort duties.

Jackdaw was transferred to Brazil in Jan. 1963, and Grackle in Apr. 1963. Bunting, MHC 45 is also reported to be on the transfer list.



JAVARI

1962, Brazillan Navy, Official

SURVEY SHIPS (Navios Hidrograficos) (NH)

2 Frigate Type

		8 /1	
Name	Pennant No.	Laid down Launched	Completed
CANOPUS	H 22	13 Dec. 1956 20 Nov. 1957	15 Mar. 1958
SIRIUS	H 21	13 Dec. 1956 30 July 1957	1 Jan. 1958
Displa	cement:	1,463 tons standard	
Measu	rement;	1,600 tons gross	
Dimer	nsions;	2364 (pp.), 246 (w.l.), 2557 (o.g.,	1×394×124 feet
Guns:		1-3 inch AA., 4-20 mm. M.G.	, ,
Machi	nery:	2 diesels. 2 shafts. B.H.P. 2,700=15	·75 kts.
Radius	5;	12,000 miles	
Comp	lement:	102	

General Built by Ishikawajima Heavy Industries Co. Ltd., Tokio, Japan, Fitted with a helicopter platform aft. Special surveying apparatus, echo sounders. Raydist equipment, sounding machines are installed and a helicopter, landing craft (LCVP), jeep, and surveying launches are carried. The propellers are of the controllable pitch type. All living and working spaces are air-conditioned. Cruising speed 11 knots. Photographs
A photograph of Canopus appears in the 1958-59 to 1965-66 editions.



SIRIUS

1966, Hajime Fukaya

3 Coastal Type

Name	Pennant No.	Laid down	Launched	Completed
ARGUS ORION TAURUS	H 31 H 32 H 33	12 Dec. 1955 12 Dec. 1955 12 Dec. 1955	6 Dec. 1957 5 Feb. 1958 7 Jan. 1958	29 Jan. 1959 11 June 1959 23 Apr. 1959
Displa	cement: 250	tons standard (3	00 tons full load)

Dimensions:

138 (pp.), 1473 (o.a.)×20 feet 2 diesels coupled to two shafts. B.H.P.: 1,200=15 kts. 35 tons Machinery: Oil fuel:

General

All built by Arsenal da Marinha in Rio de Janeiro and incorporated into the Navy
on the effective list on the dates shown as completed in the table above. Photographs

A photograph of Orion appears in the 1961-62 to 1965-66 editions.



ARGUS

1966, Brazilian Navy, Official

ALMIRANTE SALDANHA

Displacement:	3,325 tons standard (3,825 tons full load)	
Dimensions:	262 (pp.), $307\frac{1}{4}$ (o.a.) $\times 52 \times 18\frac{1}{4}$ (mean)	feet
Machinery:	Diesel, B.H.P.; 1,400=11 kts.	
Radius:	12,000 miles	

356 Complement:

General Former training ship with a total sail area of 25,990 sq. ft, and armed with four 4-inch guns, one 3-inch AA. gun and four 3-pounders. Built by Vickers Armstrongs, Ltd., Barrow. Launched on 19 Dec. 1933. Cost £314,500. Instructional minelaying gear was included in equipment. The single 21-inch torpedo tube was suppressed. Pennant No. U 10 (ex-NE 1).

It is officially stated that Almirante Saldanha has been classified as an Ocean-ographic Ship (NOc) since Aug. 1959, and completely remodelled by 1964. Photograph Reclassification

A photograph of Almirante Saldanha appears in the 1952-53 to 1959-60 editions. Disposal

The surveying vessel, former transport, José Bonifacio, H 12, was officially deleted from the list in 1966.

SEAWARD DEFENCE BOATS (NPa)

3 "P" Class

PIRANHA (P 3) PIRAJU (P.1) PIRAQUE (P 4)

Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Complement: 130 tons standard 128 × 19 † × 6 feet 1—3 inch, 23 cal.; 3—20 mm. AA. 30 D.C. Diesels. 3 shafts. B.H.P.: 1,890=20 kts. 30

Motor launches. All launched in 1947-48. Built at Rio de Janerio. The hulls are of wooden construction. Pennnant Nos. J 28, J 30, and J 32, respectively. A photograph of Piranha appears in the 1950-51 to 1960-61 editions.

Of this class Pirambu P 2, and Pirapia, P 5, were officially removed from the it in 1964, and Pirapia, P 6, in 1960.

CORVETTES (Corvetas) (CV)

10 "Imperial Marinheiro" Class

FORTE DE COIMBRA IGUATEMI IMPERIAL MARINHEIRO ANGOSTURA BAHIANA CABOCLO

IPIRANGA SOLIMOES MEARIM PURUS

Displacement: Dimensions: Guns: Machinery: Oil fuel: Complement:

911 tons standard $184 \times 30\frac{1}{2} \times 11\frac{1}{2}$ feet 1-3 inch, 50 cal., 4-20 mm, AA. 2 Sulzer diesels, B.H.P.: 2,160=16 kts. 135 tons

60

Complement: 60
General
All built in the Netherlands, launched in 1954-55, and incorporated into the Brazilian Navy in 1955. Actually fleet tugs. Pennant Nos. V 20, V 21, V 19, V 18, V 16, V 15, V 17, V 22, V 23 and V 24, respectively.

Photograph

A photograph of Imperial Marinheiro appears in the 1956-57 and 1957-58 editions.



IPIRANGA

added 1958, Official

Disposals

Disposals

The three ex-British trawlers rated as corvetas and navios-faroleiros of the "Fellpe Camarao" class, Fellpe Camarao, Henrique Dias and Vidal Negreiros; the five mine-layers rated as corvetas and Minerios of the "Carioca" class, Cabedelo, Camacim, Caravelas and Carioca; and the four ex-American patrol vessels rated as caca-sub-marinos, Graju, Grauna. Guajara and Gurupi, were all removed from the list in 1960.

RIVER MONITORS (Monitores) (M)

PARNAIBA
Displacement:
Dimensions:
Guns: 620 tons standard 620 tons standard

180½ (o.a.)×178½ (pp.),×33½×5 (max.) feet

1—3 inch, 50 cal: 2—47 mm., 2—40 mm, AA.,

6—20 mm, AA.

3" side and partial deck protection

2 sets Thornycroft vertical triple expansion, 2 shafts

1.H.P.: 1,300=12 kts.

2 of 3-drum type, working pressure 250 lb.

Machinery:

Boilers: Oil fuel: Complement: 70 tons

Built at Rio de Janeiro. Laid down on 11 June 1936. Launched in Sep. 1937, and completed in Nov. 1937. In Matto Grosso Flotifia. Pennant No. U 17 (ex-P 2). Rearmed in 1960 (see guns above). For former armament see 1959-60 edition.



PARNAIBA

1966, Brazilian Navy, Official

PARAGUAÇÚ (ex-Victoria, ex-Espirito Santo)

Displacement: Dimensions: Guns:

430 tons standard $146\frac{1}{7} \times 34\frac{1}{7} \times 5$ feet 1-3 inch, 50 cal.; 2-47 mm., 2-40 mm. AA. 6-20 mm. AA. 2 sets White triple expansion, I.H.P.; 1,100=13 kts. 2 of 3-drum type 40 tons

Machinery: Boilers: Oil fuel: Complement:

71

General
Built at Rio de Janerio. Launched on 22 Dec. 1938. In Matto Grosso Flotilla.
Pennant Nos. U 16 (ex-P 3). Re-armed in 1960 (see guns above). For former armament see 1959-60 edition.



PARAGUACU

1966, Brazilian Navy, Official

RIVER GUNBOATS (Avisos) (AV)

6 "Rio" Class

RIO DAS CONTAS RIO DOCE

RIO FORMOSO RIO REAL

Displacement:

150 tons standard 121 $\frac{1}{2}$ ×21 $\frac{1}{3}$ ×9 $\frac{2}{3}$ feet Diesel, B.H.P.; 450=15 kts.

Machinery:

Built in the Netherlands in 1955-56. Officially classified as avisos, Pennant Nos. U 21, U 20, U 22, U 23, U 24 and U 25, respectively.

Usposai
The old river gunboat Olapoque (ex-Amapa, ex-Cidade de Belem) was officially removed from the list in 1964.



RIO DOCE

Added 1958, Official

RIO TURVO RIO VERDE

REPAIR SHIPS

BELMONTE (ex-U.S.S. Helios, ARB 12. ex-LST 1127)

Displacement: Dimensions:

1,625 tons light (4,100 tons full load)
316 (w.l.), 328 (o.a.)×50×11 feet
8-40 mm. AA.
G.M. diesels. 2 shafts. B.H.P.: 1,800=11.6 kts.

Former United States battle demage repair ship. Built by Maryland D.D. Co., Baltimore. Md. Laid down on 23 Nov 1944. Launched on 14 Feb. 1945. Completed on 26 Feb. 1945. loaned to Brazil by U.S.A. in Jan. 1962 under MAP.

Disposal

The old destroyer depot and repair ship Belmonte, rated as torpedeiros depot and navio tender, was officially removed from the list in 1960.

CEARA (ex-U.S.S. ARD 14)

Dimensions:

5,200 tons 402×81 feet

General

Former United States auxiliary repair dry dock transferred to the Brazilian Navy

OILERS (Navios-Tanques) (NT)

ANITA GARIBALDI

GASTÃO MOUTINHO

Displacement: Dimensions:

Machinery:

Capacity: General

Constructed at the Naval Dockyards in Rio de Janeiro. Commissioned in 1956.

MATARIPE (BO)

TAUBATÉ (BO)

Displacement: Dimensions: Machinery: Capacity:

743 tons $1645 \times 23\frac{1}{4} \times 9\frac{1}{4}$ feet Diesel. 1 shaft

ITAPURA (BA)

PAULO AFONSO (BA)

Displacement:

Dimensions: Machinery: Capacity:

485.3 tons $140^{\circ}_{1} \times 23 \times 8$ feet Diesel. 1 shaft 389 tons

General

General Mataripe and Taubaté are oilers, and Itapura and Paulo Afonso, Pennant No: R 43, are water tankers; Near sisters. Launched in 1957.

Name

Pennant No.

Laid down Launched Completed

RAZA (ex-Klaskanine, AOG 63) G 19 (ex-R 2) 21 Dec. 44 3 Feb. 45 26 Feb. 45 RIJO (ex-Gualula, AOG 28) G 20 (ex-R 1) 24 Apr. 44 3 June 44 19 Aug. 44

Displacement:

2,228 tons full load 217, \times 37 \times 7 feet Diesels, B.H.P.: 850=9 kts.

1,500 tons

Dimensions: Machinery: Capacity: Complement:

41

eneral Former American petrol carriers (gasoline tankers). Both built at East Coast Ship-irds, Bayonne, N.J., U.S.A. U.S.M.C. type TI-M-A2. A photograph of *Rijo* appears in the 1950-51 to 1959-60 editions.

GARCIA D'AVILA (ex-YO 71)
Displacement: 1,
Dimensions: 17
Machinery: Fa

1.400 tons $1761\times32\times15$ feet Fairbanks Morse diesel. 5 cylinders, 2 cycle, B.H.P.: $500\!=\!10$ kts.

General
Former American yard oiler. Built in 1943. Purchased from the U.S. Navy in 1947.
Pennant No. G 12.

POTENGI

Displacement: Dimensions:

Machinery: Oil:

600 tons $175\frac{1}{2}$ (pp.), $178\frac{1}{4}$ (o.a.) \times $24\frac{1}{4}$ \times 6 feet Diesels. 2 shafts. B.H.P.; 550=10 kts. 450 tons

Complement:

General Built at the Papendrecht yard in the Netherlands. Launched on 16 Mar. 1938. Employed in the Matto Grosso Flotilla on river service. Pennant No. G 17.

TRANSPORTS (Navios-Auxiliares) (TrT)

4 "Pereira" Class

 Pennant No.
 Lald down
 Launched
 Completed

 G 21
 13 Dec. 1955
 24 Aug. 1956
 29 Dec. 1956

 G 16
 13 Dec. 1953
 10 Aug. 1954
 1 Dec. 1954

 G 15
 13 Dec. 1953
 10 June 1954
 30 Dec. 1954

 G 22
 13 Dec. 1955
 13 Dec. 1956
 23 Mar. 1957
 ARY PARREIRAS BARROSO PEREIRA CUSTODIO DE MELLO SOARES DUTRA

Displacement: Measurement: Dimensions:

Boilers:

4,800 tons standard (7,300 tons full load)
4,200 tons deadweight, 4,879 tons gross (Panama)
362 (pp.), 391\(\frac{3}{2}\) (o.a.)\(\times 2\)\(\frac{5}{2}\)\(\times 20\)\(\frac{1}{2}\) feet (max.)
2—20 mm. AA.
Ishikawajima double reduction geared turbines. 2 shafts.
5,H.P. 4,800=17.67 kts. (sea speed 15 kts.)
2 Ishikawajima two drum water tube type, oil fuel
127 (Troop capacity 1,972)

Guns: Machinery:

Complement:

All built in Japan by Ishikawajima Heavy Industries Co., Ltd., Tokio. Transports and cargo vessels, Flush deckers with forecastle and long poop. Elevator type helicopter landing platform laid on aft. Normal troop carrying capacity for 497 personnel, with commensurate medical, hospital and dental facilities. All working and living quarters are mechanically ventilated with partial air conditioning. Refrigerated cargo space of 15,500 cubic feet. Can carry 4,000 tons of cargo. Barroso Pereira and Custódio de Mello were incorporated into the Brazilian Navy on 22 Mar. 1955 and 8 Feb. 1955, respectively. Formerly armed with eight 40 mm. AA. guns, Custódio de Mello has been classified as a training ship since July 1961. A photograph of Soares, Dutra appears in the 1958-59 to 1963-64 editions.



CUSTODIO DE MELLO

1964, Wright & Logan

TRAINING SHIP (Navio-Escola)

ALBATROS (ex-Wishbone)
Displacement:
Dimensions:
Machinery:
Sail area:

100 tons 82§×17⅔ feet Auxiliary diesel. B.H.P.: 85=5 kts. 3,000 square feet

General
British auxiliary two-masted schooner yacht sold to the Brazilian Navy as a training ship. Employed as Naval College Training Yacht. Ballast (lead keel): 28 tons. The ex-German sail training ship (navios-escolas) Guarabara (ex-Albert Leo Schlageter) was officially removed from the list in 1960, and sold to Portugal

TUGS (Rebocadores) (R)

TRIDENTE (ex-ATA 235)

TRITÃO (ex-ATA 234)

TRIUNFO (ex-ATA 236)

Displacement: Dimensions: Guns:

534 tons standard (835 tons full road) 1334 (w.l.), 143 (o.a.) \times 33 \times 13 $^{1}_{4}$ feet 2—20 mm. AA. G.M. diesel-electric H.P.: 1.500–13 kts.

General Machinery: General All built by Gulfport Boiler & Welding Works, Inc., Port Arthur, Texas. and launched in 1954. Ex-U.S. ATRs. Pennant Nos. Tridente, R 22, Tritão, R 21, Triunfo, R 23 (ex-R 2, R 1, R 3).

A photograph of Tridente appears in the 1950-51 to 1957-58 editions.

AUDAZ CENTAURO

GUARANI PASSO DA PATRIA VOLUNTARIO 130 torrs gross 82 (pp.), 90 $\frac{1}{2}$ (o.o.)×23 $\frac{1}{2}$ ×7 $\frac{1}{2}$ (fore), 1 $\frac{1}{6}$ (aft) feet Wumang-diesel, B.H.P.; 750=11 kts. Measurement: Dimensions: Machinery:

All built at Holland-Nautic Yard, Haarlem, Netherlands, in 1953. Pennant Nos. R 31, R 33, R 34, R 35 and R 36, respectively.

LAURINDO PITTA

Displacement: Dimensions: Machinery:

514 tons $130\times26\times15$ feet Triple expansion, 2 shafts, I.H.P.: 850 $\,$ 11 kts.

Built in Great Britain by Vickers, Launched in 1910, Pennant No. R 14,

ANTONIO JOAO

Displacement:
Dimensions:

80 tons $75\frac{1}{2}\times17\frac{1}{4}\times6\frac{2}{3}$ fret Fairbanks Morse diesels. B.H.P.: 180

Machinery:

General Formerly classed as aviso. General utility craft for river service. Pennant No. R 26.

WANDENKOLK

Guns:

Machinery:

Displacement: Machinery: 350 tons S.H.P.: 600

General

Formerly known as Almirante Wandenkolk, Pennant No. R 20.

BRUNEI

FAST PATROL BOAT

I New Construction

Dimensions:

90 (pp.), 96 (w.l.), 99 (o.a.) \times 25½ \times 7 feet 1—40 mm., 1—20 mm.
3 Bristol Siddeley Proteus gas turbines. 3 shafts. B.H.P.: 12,750=54 kts.

Ordered from Vosper Ltd.. Portsmouth, England, on 10 Dec. 1965. Constructed of resin bonded timber with aluminium alloy superstructure. Diesels for cruising and manoeuvering. Similar to Vosper motor torpedo boats built for the Royal Danish Navy. Provisional complement 3 officers and about 16 men. Delivery is due in 1967.

BULGARIA

Naval Attaché In London: Colonel Boris I. Toshev.

Naval Attaché in Washington:
Colonel Tzvetko Tomov.
Personnel
1966: 4,500 officers and ratings

Mercantile Marine

Lloyd's Register of Shipping: 63 vessels of 236,550 tons gross

2 "W" Type

1,030 tons surface, 1,180 tons Displacement:

Dimensions:

Tubes: Machinery:

surface
Electric motors. H.P.: 2.500=

15 kts. submerged Radius. 13.000 miles

Complement:

Reported to have been transferred from the Soviet Navy in 1958.

SUBMARINES



"W" Type

Added 1966

I "MV" Type

350 tons surface (420 tons sub-Displacement:

merged) $167\frac{1}{2}\times16\times12$ feet 1—45 mm. AA. 2—21 inch Dimensions: Tubes:

Machinery:

Diesels, B.H.P.: 1.000=13 kts surface.

Electric motors: H.P.: 800=10 kts, submerged

Oil fuel: tons Radius:

4,000 miles at 10 kts. surface, 100 miles at 5 kts. submerged

Complement:

Bulgaria is reported to have acquired three Soviet M V type submarines, M1, M2 and M3, from the U.S.S.R, in 1954; but two were exchanged for two of the "W" class in 1958.

I Ex-U.S.S.R. "Otlichnyi" Type

GEORGI DIMITROV (ex-Ognevoyi)

Displacement: 1,800 tons standard (2,650 tons full load) $387\frac{1}{8}$ (o.a.) $\times 36\frac{1}{4} \times 12\frac{1}{2}$ feet Dimensions:

4-5·1 inch, 55 cal. (2 twin), 2-3 inch AA., 6-37 mm. AA. Guns:

8—21 inch 4 D.C.T. 68 to 80 Tubes: A/S weapons:

Mines: Machinery: Geared turbines. 2 shafts. 5.H.P.: 60,000=38 kts.

Boilers: 500 tons 250 Oil fuel:

Complement:

Built by Marti Nikolaiev. Launched in 1943. Transferred from the U.S.S.R. in 1957. In 1961 she was due to be scrapped; but in 1962 it was reported that she was undergoing overhaul. Bulgaria is reported to have received at least one other destroyer from the

DESTROYER



GEORGI DIMITROV

1960. Mr. P. H. Silverstone

U.S.S.R.; but the two Soviet destroyers of the "Skoryi" class formerly reported to be in Bulgarian waters on

loan or base facility terms are now reported to be no longer on the list.

FRIGATES

2 "Riga" Type

DRUZKI Displacement: SMELI

950 tons standard (1,200 tons full load) 2783×293×10 feet 3-3-9 inch AA., 4-37 mm. AA. 3-21 inch Dimensions: Guns: Tubes:

A/S weapons; Mines: 4 D.C.T. Machinery:

Geared turbines. 2 S.H.P.: 24,000=27 kts. 2 shafts.

Only the above two units of the "Riga" class are reported to exist, Transferred from the Soviet Navy in 1957 and 1958, one each year.

PATROL VESSELS

2 "Kronstadt" Type

300 tons standard (350 tons Displacement:

Dimensions: Guns:

40

tons standard (350 tons full load)

167×19½×9 feet

1—3·4 inch, 2—37 mm. AA.,

3—20 mm. AA.

Depth charge throwers

Diesels. 2 shafts, 27 kts, A/S weapons: Machinery: Oil fuel: 20 tons

Complement: "Kronstadt" class submarine chasers reported to have been transferred from the U.S.S.R. in 1957.

MINESWEEPING BOATS

24 Small Type

Of 24 minesweeping boats, 12 are reported to have been acquired in 1950 and 12 in 1956 for harbour, coastal, inshore and estuarial employment and general purpose duties.

FAST PATROL BOATS

8 "P 4" Type

Displacement:

Dimensions: Guns: Machinery:

50 tons $85\frac{1}{2} \times 20 \times 6$ feet 4—25 mm. AA. 4-25 mm. AA. Diesels. B.H.P.: 2,000=42 kts.

Motor torpedo boats of the "P 4" class reported to have been transferred from the U.S.S.R in 1956.

MINELAYER

I Training Type

Displacement:

2.220 tons

A dual purpose minelayer and training ship of new nostruction is reported being acquired from the

MINESWEEPERS

2 "T 43" Type

Displacement: 500 tons standard (600 tons full Dimensions:

load)
200×27½×8½ feet
4—37 mm. AA., 8—13 mm.

Diesels. 2 shafts. B.H.P.: 3,200 = 18 kts. Machinery: 60

Complement:

Three "T" class minesweepers are reported to have been transferred from the U.S.S.R. in 1953, of which one was cannibalised.

MINESWEEPERS INSHORE

"T 301" Type

Displacement: 130 tons standard (180 tons full load) 100×16×4½ feet

Dimensions: 2-37 mm. AA. 2-25 mm. AA. Diesels. 2 shafts. B.H.P.: 480= Guns: Machinery: 10 kts.

Complement: "T 301" class inshore minesweepers reported to have been transferred from the U.S.S.R. in 1955.

30

2 "Artillerist" Class

240 tons standard (280 tons Displacement: 240 tons acoust.
full load)
160½×19×8½ feet
1—3 inch, 2—37 mm. AA., 3 Dimensions:

Guns: Diesels. 2 shafts. B.H.P.: 3,300 = 22 kts. Machinery:

tons Oil fuel: 18 Complement:

"Artillerist" class submarine chasers reported to have been transferred from the U.S.S.R. in 1947.

LANDING CRAFT

6 LCS Type

Six support landing craft were reported to have been acquired from the U.S.S.R. in 1953.

10 LCU Type

Displacement: Guns: 164 feet (o.g.) 1-37 mm. AA.

Ten utility landing craft are reported to have been built in Bulgaria in 1954. Based on a German Second World War design.

12 PA 2 Type

Displacement: Dimensions: Guns: Machinery:

 $\begin{array}{l} 45 \;\; tons \\ 82 \times 16\frac{1}{2} \times 5\frac{1}{2} \;\; feet \\ 2-25 \;\; mm. \;\; AA. \\ Speed=40 \;\;\; kts. \end{array}$

Former Soviet fast patrol boats of the PA 2 type. Reported to have been acquired from the U.S.S.R. in 1949.

50 PTC Type

Small patrol craft. Vary in detail. Number also reported as 30 units.

TRAINING VESSELS

ASSEN

Displacement: Guns: Machinery:

240 tons 2—65 mm., 1 M.G. H.P.: 120=7 kts.

Auxiliary sail training vessel. Launched in 1912, Refitted in 1933-34.

There is also the KAMICIA launched in 1898. Refitted in 1925. Speed, 10 kts. Also fitted with sails.

TUG

I Fleet Type

A Soviet-built tug with an overall length of 135 feet.

Displacement:

Administration

Vice-Chief of Staff, Defence Services (Navy): Commodore Thaung Tin.

BURMA

Naval, Military and Air Attaché in London: Colonel Thein Doke.

Naval, Military and Air Attaché in Washington: Colonel Kyi Han.

Personnel

1966: 330 officers and 6,000 ratings including all reserves.

FRIGATE

I Ex-British "River" Class

1.460 tors standard, (2.170 tons

17.40 tolis samuals, (2.170 tolis full load)
283 (pp.), 301½ (o.a.)×36½×
12 feet Dimensions:

12 reet
1—4 inch d.p., 4—40 mm. AA
Triple expansion. 2 shafts.
1.H.P.: 5,500=19 kts.
2. of 3 drum type Guns: Machinery:

Boilers:

tons Complement:

"River" class frigate. Acquired from Great Britain

MAYU (ex-H.M.S, Fal)

Builders
Smiths Dock Co. Ltd.,
South Bank-on-Tees

Laid down 20 May 1942

Launched 9 Nov. 1942

Combleted 2 July 1943



MAYU

Burmese Navy, Official

ESCORT MINESWEEPER

I Ex-British "Algerine" Class

YAN MYO AUNG Port A
(ex-H.M.S. Mariner, ex-Kincardine) Canada

Builders

Laid down Launched Completed

Displacement:

in 1947.

1,040 tons standard (1,335 tons

Dimensions:

1,040 tons standard (1,335 tons full load)
225 (pp.), 235 (o.a.)×35½×
11½ (max.) feet
1—4 inch 4—40 mm AA.
Triple expansion. 2 shafts.
1.H.P.: 2000=16·5 kts.
2, of 3 dum type
4,000 miles

Guns:

Machinery:

Boilers: Radius

140 Complement:

General

Former ocean minesweeper in the British Navy, of the corvette type and used as escort vessel. Mariner, M 380 was transferred from Great Britain in 1957. Handed over to Burma in London and renamed Yan Myo Aung, on 18 Apr. 1958. Fitted for miralaying and can carry 16 mines, eight on each side.

Port Arthur Shipyards, 26 Aug. 1943

9 May 1944

23 May 1945

YAN MYO AUNG

1964 Burmese Navy, Official

MOTOR TORPEDO BOATS

5 British-Built MTB/MGB Convertible Type

T 201 (ex-PTS 101) T 202 (ex-PTS 102)

T 203 (ex-PTS 103) T 204 (ex-PTS 104)

T 205 (ex-PTS 105)

Displacement: Dimensions: Guns: Tubes: Machinery: Complement: 50 tons standard (64 tons full load) 67 (pp.), $71\frac{1}{2}$ (o.a.) $\times 19\frac{1}{2} \times 6$ (max.) feet (as MGB) $1-4\cdot 5$ inch, 1-40 mm. AA. (twin) 2 Napier Deltic diesels. S.H.P.: 5,000=42 kts.

Construction

Construction
Interchangeable motor torpedo boats/motor gunboats built by Saunders Roe (Anglesey) Ltd., England, Convertible craft of aluminium construction, with riveted skin and aluminium alloy framework. As well as main engines, auxiliary power is also provided by diosels. The Saunders-Roe slow-speed electric drive was fitted to facilitate manoeuvring in the confined inland waters where the craft may be required to operate. Armament and layout of the vessels were similar to the British fast patrol boats of the "Dark" Class. The cost including engines, equipment and spares, of the five boats was over £1,800,000. T 201 was launched on 24 Mar. 1956. All were completed in 1956-57.

A photograph of T 201 of this class appears in the 1956-57 to 1961-62 editions.



1966, Burmese Navy, Official

SUPPORT GUNBOATS

4 Ex-British LCG (M) Type

INDAW

INLAY

INMA

INYA

Displacement: Dimensions: Guns: Machinery:

Complement:

381 tons $154\frac{1}{2} (o.a.) \times 22\frac{1}{2} \times 7\frac{1}{2} \text{ feet}$ 2—25 pdr., 2—2 pdr. Paxman Ricardo diesels. 2 shafts. B.H.P.: 1,000=13 kts.

Former British LCG (M), Landing craft, gun medium. Employed as gunboats. A photograph of Inlay of this class appears in the 1950-51 to 1961-62 additions.



INMA

Burmese Navy, Official

PATROL VESSEL

Ex-U.S.S. FARMINGTON, PCE 894

Displacement: Dimensions:

640 tons standard (903 tons full load)
180 (w.l.), 184 (o.a.)×33×9½ feet
1—3 inch, 50 cal, d.p.; 2—40 mm. AA. (1 twin); 8—
20 mm. AA. (4 twin)
1 hedgehog, 2 D.C.T., 2 D.C. tracks
G.M. diesel. 2 shafts. B.H.P.: 1,800=15 kts.

A/S weapons: Machinery:

Former U.S. patrol ship (escort). Built by Willamette fron & Steel Corp., Portland, Oregon. Laid down 7 Dec. 1942, launched 15 May 1943, completed 10 Aug. 1964. Transferred 10 June 1965.

RIVER GUNBOATS

2 Burmese-Built Large Type

NAGAKYAY Displacement: Dimensions:

400 tons standard (450 tons full load)
163×26½×5½ feet
2—25 pdr. Q.F., 2—40 mm. AA.
2 Paxman.Ricardo turbo-charged diesels. 2 shafts.
B.H.P.: 1,160=12 kts. Guns: Machinery:

Complement:

Construction

Built at the Government Dockyard, Dawbon, Rangoon, Burma, Nagakyay was completed on 3 Dec. 1960 and Nawarat on 26 Apr. 1960.



NAGAKYAY

1962, Burmese Navy, Official

		10 Yugoslavia	n-Built "Y" Type	
Y Y Y Y Y Y	No. 301 302 303 304 305 306 307 308	Loid down 10 Nov. 1956 12 Feb. 1957 14 Apr. 1957 10 June 1957 1 July 1957 22 July 1957 6 Aug. 1957 21 Aug. 1957	Launched 25 Mar. 1957 26 June 1957 14 Aug. 1957 17 Aug. 1957 30 Aug. 1957 6 Oct. 1957 30 Oct. 1957 27 Nov. 1957	Completed 28 Feb. 1958 26 Mar. 1958 26 Mar. 1958 26 Mar. 1958 10 Oct. 1958 26 Mar. 1958 10 Oct. 1958 10 Oct. 1958
	309 310	11 Sep. 1957 8 Oct. 1957	23 Dec. 1957 28 Dec. 1957	20 Nov. 1958 20 Nov. 1958

Displacement: Dimensions: Gunt

120 tons 100 (pp.), 104% (o.a.)×24×3 feet 1—40 mm. AA., 1—2 pdr. 29 ABCC 1,000=13 kts. 29 Machinery: Complement:

Construction

All ten of these boats were built at the Shipyard "Uljanik," Pula, in Yugoslavia. Photographs

A photograph of Y 301 appears in the 1962-63 and 1963-64 editions.



Y 310

1964, Burmese Navy, Official

9 Converted Transport Type

HINTHA SABAN

SAGU SEINDA SETKYA SETYAHAT

SHWEPAZUN SHWETHIDA SINMIN

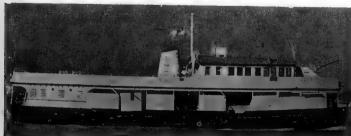
Displacement: Dimensions: Guns:

98 tons $94\frac{1}{2}\times22\times4\frac{1}{2}$ feet 6—20 mm. AA.

6-20 mm. AA. Crossley ERL.-6 diesel B.H.P.: 160-12 kts. Machinery:

Complement:

Photographs
A photograph of Shwepazun appears in the 1952-1953 to 1963-64 editions, and of Saban in the 1962-63 and 1963-64 editions.



SAGU

1964, Burmese Navy, Official

LANDING CRAFT

8 U.S.-Built LCM Type

LCM 701 **LCM 702**

LCM 703 LCM 704

LCM 705 LCM 706 L M 707 LCM 708

Displacement: Dimensions; Machinery; Complement:

28 tons 56×14×4 feet 2 Gray Marine diesels, B.H.P.: 225

PATROL GUNBOATS

6 U.S.-Built PGM Type

PGM 403

Displacement: Dimensions:

100 tons 95×19×5 feet 1—40 mm. AA., 2—0.5 U.S. Browning M.G. 4—6.M. diesels. 2 shafts. B.H.P.: 1,000=16 kts. 17 Guns: Machinery:

PGM 404

Complement:

PGM 402

Construction

PGM 401

NAWARAT

Built by the Marinette Marine Corporation, U.S.A. Machinery comprises 2-stroke, 6-cylinder, tandem geared, twin diesel propulsion unit—1 L.H, and 1 R.H. Brake horse power: 500 per unit.



PGM 401

1962, Burmese Navy, Official

PGM 405

MOTOR GUNBOATS

7 Ex-United States C.G.C. Type

No.	Builders	Laid down	Launched	Completed
MGB 101	U Tin Shein Bros.	9 Sep. 1959	9 May 1960	29 Nov. 1960
MGB 102	Pretam Singh & Co.	12 Sep. 1959	2 July 1960	30 Aug. 1960
	U Tin Shein Bros.	18 Aug. 1959	26 Mar. 1960	29 Nov. 1960
MGB 105	Pretam Singh & Co.	16 Sep. 1959	11 Aug. 1960	9 Sep. 1960
MGB 106	U Chit Sein & Co.	28 Aug. 1959	28 May 1960	28 Nov. 1960
MGB 108	Pretam Singh & Co.	16 Sep. 1959	25 Aug. 1960	9 Sep. 1960
MGB 110	U Chit Sein & Co.		23 Aug. 1960	28 Nov. 1960

Displacement-Dimensions: Guns: Machinery:

49 tons standard (66 tons full load)
78 (pp.) 83 (o.a.)×16×5½ feet
1—40 mm. AA., 1—20 mm. AA.
4 G.M. diesels. 2 shafts. B,H.P.: 800=11 kts.

Complement:

Construction
Ex-U.S.C.G. 83-ft, type cutters with new hulls built in Burma. Machinery comprises 2-stroke, 6-cvlinder, tandem geared, twin diesel propulsion units—1 L.H. and 1 R.H. drive. Brake horse power: 400 per unit.



MGB 102

1962, Burmese Navy, Official

TRANSPORT

PYIDAWAYE

Measurement: Dimensions: Machinery: Boilers:

Radius: Complement: 2.217.31 tons gross 270×47×15 feet Fleming & Ferguson triple expansion I.H.P.: 2,000 2 Scotch (return type)

2,000 miles 88

General

Former passenger ship, In service since 1962. Wears the Burmese naval ensign.



PYIDAWAYE

1964, Burmese Navy, Official

Disposals

Disposals

The former British motor minesweepers MMS 197 and MMS 201 were scrapped in 1957 and 1956, respectively.

The former British boom defence vessel Barstoke (lent to Rangoon Port Commission since 1946) was returned to the Royal Navy at Singapore in 1959 and sold.

The tug Tusa 233 was officially deleted from the list in 1964.

CAMBODIA

Marine Royale Khmere

The Marine Royale Khmere was established on 20th April, 1954 Personnel

1966: Navy: 1,200 officers and men. Marine Corps: 150 officers and men.

PATROL VESSELS

2 Ex-U.S. PC Type

E 311 (ex-Flamberge, P 631, ex-PC 1086) E 312 (ex-L'Inconstant, P 636

Displacement: Dimensions: Guns: Machinery: Oil fuel:

325 tons standard (400 tons full load)
170 (w.f.), 173} (o.o.)×23×6} feet
1—3 inch d.p., 1—40 mm. AA., 5—20 mm; AA.
2 G.M. diesels. 2 shafts. B.H.P.: 3,600=18 kts. 2 G.M. diesels. 2 shaft: 62 tons 6,000 miles at 10 kts.

Radius:

Complement:

General General
Former American submarine chasers of the PC type. Transferred from the United
States Navy to the French Navy in 1951 and served in Indo-China; and again transferred to the Marine Royale Khmere in 1955-56. Built of steel.



E 312

1960 Official

SUPPORT GUNBOAT

I Ex-U.S. LSIL Type

P 111 (ex-LSIL 9039, ex-LISL 875)

Displacement: Dimensions: Guns:

230 fons standard (387 tons full load) $169\times23\frac{7}{2}\times5\frac{7}{2}$ feet 1-3 inch, 1-40 mm, AA., 2-20 mm, AA. 2 G.M. diesels, 2 shafts, B.H.P.: 1,000=15 kts, 110 tons 8,000 miles at 12 kts.

Machinery: Oil fuel: Radius:

Complement:

Former American infantry landing ship of the LSIL type. Transferred from the United States Navy to the French Navy, on 2 Mar. 1951 and stationed in Indo-China; and again transferred to the Marine Royal Khmere in 1957.

TORPEDO BOATS

2 Ex-Yugoslav 108 Type

Displacement: Dimensions: Guns: Tubes:

55 tons standard (60 tons full load) 69 (p.p.), 78 (o.a.)×21½×7½ feet 1—40 mm, AA., 4—12·7 mm. MG.

Machinery: Complement:

Packard petrol motors. B.H.P.; 5,000=36 kts.

General

Two torpedo boats are reported to have been presented by Yugoslavia in 1965.

MOTOR GUNBOAT

I Ex-U.S. PGM Type

PGM 70

Displacement: 100 tons 95×19×51 feet 1—40 mm, AA. Dimensions: Guns:

Machinery: Complement: G.M. diesels. 2 shafts. B.H.P.: 1,000=16 kts.

General

Built in the U.S.A. Transferred under the Military Aid Programme in 1964.

PATROL BOATS

3 Ex-HDML Type

ex-VP 748 (ex-HDML 1223) ex-VP 749 (ex-HDML 1229)

ex-VP 762 (ex-VP 42) (ex-HDML 1457)

Displacement: Dimensions: Guns: Machinery:

46 tons standard (54 tons full load)
72 (o.a.)×16×5‡ feet
2—20 mm. Oerlikon AA., 4—7·5 mm. M.G.
2 diesels, 2 shafts, B.H.P.; 300=10 kts.

Oil fuel: Radius: Complement:

2,200 miles at 10 kts.

Former British harbour defence motor launches of the HDML type. Transferred from the British Navy to the French Navy in 1944 (VP 762) and 1950 (VP 748 and VP 749); and again transferred from the French Navy to the Marine Royale Khmere in 1956 (VP 748) and later (other two).

TANK LANDING CRAFT

2 Ex-U.S. LCT(6) Type

ex-LCT 9085 (ex-622) Displacement:

> Guns: Machinery:

Dimensions:

160 tons standard (320 tons full load)
105 (w.l.), 119 (o.a.)×32½×5 feet
1—40 mm. AA., 4—20 mm. AA.
Gray diesels. 3 shafts. B.H.P.: 675=8 kts.
11, tons
700 miles at 7 kts.

Oil fuel: Radius:

Complement: General

Former American tank landing craft of the LCT (6) type. Transferred from the United States Navy to the French Navy for service in Indo-China and again transferred from the French Navy to the Marine Royale Khmere in 1956-57.



LCT Type

Ex-French Navy

ex-LCT 9091 (ex-720)

UTILITY LANDING CRAFT

4 Ex-U.S. LCU Type

HQ 534 (ex-LCU 9089, ex-U.S.S. LCU 783) ex-LCU 9073, ex-U_.S.S. LCU 1420

T 914 (ex-U.S.S. LCU 783) T 915 (ex-U.S.S. LCU 1421)

180 tons standard (360 tons full load)
115 (w.l.), 119 (o.a.)×34×6 feet
2-20 mm. AA.
3 diesels, 3 shafts. B.H.P.: 675=8 kts. Displacement: Dimensions: Guns: Machinery:

Radius: Complement: Oil fuel: 12 tons 750 miles at 7 kts:

Former United States utility landing craft of the LCU type. LCU 9098 and LCU 1420 were transferred from the U.S. Navy to the French Navy for service in Indo-China: and again transferred from the French Navy to the Marine Royale Khmere in 1954-56. LCU 783 and LCU 1421 were transferred on 31 May 1962. There are 7 landing craft (LCM) 39 armoured craft (LCVP), 2 patrol boats (YP) and 6 auxiliaries (YAG).

There are also Pelican, R 912 (ex-U.S.S. YTL 555) and Pinquoule, R 911 (ex-U.S.S. YTL 556) transferred on 15 Sep. 1956 by the French.

CAMEROON

Complete independence was proclaimed on 1 Jan. 1960

PATROL BOATS

I Ex-French VC Type

VIGILANTE (ex-VC 6, P 756)

Displacement: 75 tons standard (82 tons full load) $104\frac{1}{2}\times15\frac{1}{2}\times5\frac{1}{2}$ feet 2—20 mm. AA. Dimensions: Guns:

Mercedes-Benz diesels, 2 shafts. B.H.P.: 2,700=28 kts. 1.500 miles at 15 kts. Machinery: Radius:

Complement: General

Former French seaward defence motor launch of the VC type. Built by Constructions Mécaniques de Normandie, Cherbourg, Completed in 1958. Transferred from France to the Republic of Cameroon on 7 Mar. 1964 (officially handed over).

I Ex-HDML Type

PATRIE DU CAMEROUN (ex-VP 768, ex-HDML 1228)

Displacement: Dimensions:

40 tons standard (52 tons full load)
71×15½×6 feet
2—20 mm. AA., 4 M.G.
2 diesels, 2 shafts. B.H.P.: 300=12 kts.
2,200 miles at 10 kts. Guns: Machinery: Radius:

Oil fuel: Complement: 6.2 tons

General

General
Former British harbour defence motor launch of the HDML type Launched in 1943.
Transferred from the British Navy to the French Navy in 1950 for service In Indo-China; and again transferred from the French Navy to the Cameroon Government in 1963 to replace the ex-VP 747, ex-HDML 1423.



HDML Type

Ex-French Navv

ROYAL CANADIAN NAVY

Administration

Minister of National Defence: The Hon. Paul T. Hellyer, P.C., M.P. Associate Minister of National Defence: The Hon. Leo Cadieux, M.P.

On 1 Aug. 1964 the Naval Board was dissolved, and Naval Headquarters, Army Headquarters and Air Force Headquarters were jointly designated Canadian Forces Headquarters.

The naval member of the new integrated Defence Staff (senior personel) is:— Chief of Personnel (and Principal Naval Adviser):

Vice-Admiral K. L. Dyer, D.S.C., C.D.

Naval members among the Deputy Chiefs

Deputy Chief of Operations:

Rear-Admiral R.P. Welland, D.S.C., Bar, C.D.

Deputy Comptroller General: Rear-Admiral C. J. Dillon, C.D.

Deputy Chief Logistics: Rear-Admiral H. G. Burchell, C.D. Commander Maritime Command:

Rear-Admiral W.M. Landymore, O.B.E., C.D.

Maritime Commander Pacific: Real-Admiral M.G. Stirling, C.D. Secretary Defence Staff: Commodore F.B. Caldwell, C.D.

Senior Naval Liaison Officer, London:
Captain G.H. Hayes, D.S.C., C.D. R.C.N.
Senior Naval Liaison Officer. Washington:
Captain E.P. Earnshaw, C.D., R.C.N.

R.C.N.

Canada's Navy officially came into being on 4 May, 1910, when Royal Assent was granted to the Naval Service Act.

granted to the Naval Service Act.

Ships of the Royal Canadian Navy served in three wars. During the First World War the Canadian naval strength was 9,600 officers and men and 100 ships. During the Second World War the R.C.N. expanded to 95,000 officers, men and wrens, and 392 ships, Canada's major and Growth being developed to the Poetla of the naval effort being devoted to the Battle of the Atlantic. Canadian destroyers served in the Far East throughout the Korean War.

Personnel

The strength on 1 Jan. 1966 was 18,902:-2,071 officers, 15,508 men and wrens, 181 apprentices, and 542 officer cadets.

Flag

A new Canadian flag has replaced the Red,

White and Blue Ensigns:—
Official description: A red flag of the proportions two by length and one by width, containing in its centre a white square the width of the flag, with a single red maple leaf centered therein.

Navy Estimates

1954-55:	\$337,281,000	1960-61:	\$271,300,000
1955-56:	\$326,318,000	1961-62:	\$279,900,000
1956-57:	\$330,200,000	1962-63:	\$287,466,000
1957-58:	\$309,040,000	1963-64:	\$306,184,000
1958-59:	\$280,500,000	1964-65:	\$272,892,000
1959-60:	\$287,500,000	1965-66:	\$292,565,000

Ships

During 1966 the R.C.N. has had 43 ships in commission, as follows:— Aircraft carrier Ocean escorts (frigates) 10 Submarines
Operational support ship Escort maintenance ship Diving depot ship Reserve training vessels

In addition one RN submarine has been attached to the First Canadian Submarine Squadron

Ships of the R.C.N. carry a maple leaf on the funnel (or after funnel). The senior ship of a squadron wears a command broad pennant. This is a swallow-tailed pennant, white, with blue borders top and bottom, and bearing the squadron number in blue. "Barber Pole" stripes are painted on the lower structure of the foremast of ships of the Fifth Canadian Escort Squadron, in the tradition of the "Barber Pole Brigade," mid-ocean escort group of the Second World War.

With the proclamation of the new national flag on 15 Feb. 1965 Canadian ships no longer wear the Red, White or Blue Ensigns, the new maple leaf flag fulfilling the functions of jack,

ensign and national flag.

Mercantile Marine

Lloyd's Register of Shipping:

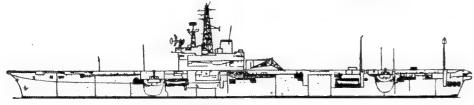
864 vessels of 623,900 tons gross Sea:

Great Lakes:

290 vessels of 1,205,841 tons gross Total: 1,154 vessels of 1,829,741 tons gross

Silhouettes

Scale: 150 ft.=1 inch



BONAVENTURE



ALGONOUIN





Converted St. LAURENT Class



Original ST. LAURENT Class



PRESTONIAN Class (midship deckhouse)



RESTIGOUCHE Class



ATHABASKAN



PRESTONIAN Class (no deckhouse)

AIRCRAFT CARRIER (CVL)

Nσ.

(ex-Powerful)

Laid down

I Modified "Majestic" Class BONAVENTURE CVL 22 Belfast

Displacement:

Guns: Aircraft:

Dimensions:

16,000 tons standard (20,000 tons full load)
Length: 630 (pp.), 704 (o.a.) feet. Beam (hull): 80 feet Width 112½ feet, 128 (o.a.) feet including angled deck and sponsons. Draught: 25 feet 8—3 inch (4 twin mounts) AA. or d.p.; 4—6 pdr. saluting 21 capacity: Tracker (CSZF-2) aircraft. Sikorsky (HO4-5-3) helicopters are being replaced by CHSS-2 (Sea King) helicopters (one Sikorsky retained as plane guard)

Machinery:

(one Sikorsky retained as plane guard)
Parsons single-reduction geared turbines. 2 shafts. S.H.P.: 40,000
=24.5 kts. (designed)
Admiralty 3-drum type. Steam pressure 350 lb./sq. in.
1,370 (war)

Boilers:

Complement:

General

First aircraft carrier owned by the Royal Canadian Navy. Air recognition rumber 22 painted on flight deck, The type designator and hull number CVL 22 follows the NATO code and signifies a small ASW aircraft carrier,

Construction

Construction

The former British Powerful was suspended in May 1946, but purchased by Canada and construction was resumed in July 1952, when she was re-named Bong-venture. She was fitted with the British steam catapult and angled deck redesigned to handle jet aircraft, plans being revised to provide for a modern aircraft carrier: the modification included strengthening the flight deck and elevators and improving arrester gear.

Modernisation
Under the Five-Year Equipment Programme announced on 22 Dec. 1964 a major refit of Bonaventure is scheduled for 1966-67, including rearrangement of fighting and living spaces, new radars, and improved support facilities for the CHSS2 helicopters.

Photographs
Starboard bow view in the 1957-58 edition. Starboard broadside and port bow views in the 1958-59 edition. Starboard quarter oblique aerial view, showing angled deck, in the 1958-59 to 1960-61 editions. Dead overhead aerial plan view showing flight deck in the 1957-58 to 1962-63 editions. Port broadside surface view in the 1959-60 to 1963-64 editions. Port bow oblique aerial view in the 1961-62 to 1965-66 editions. Starboard broadside aerial view in the 1963-64 to 1965-66 editions.

Drawing
Starboard elevation and plan. Redrawn in 1959.
Scale: 128 feet=1 inch.

BONAVENTURE

Launched

Completed

Harland & Wolff, Ltd., 27 Nov. 1943 27 Feb. 1945 17 Jan. 1957

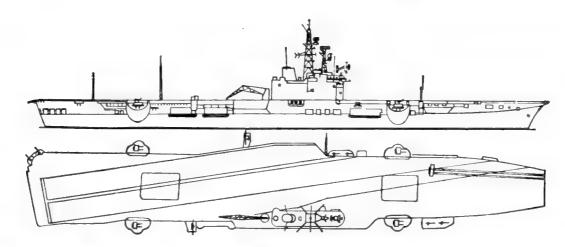


BONAVENTURE

1966, Royal Canadian Navy, Official



1966, Royal Canadian Navy, Official





BONAVENTURE

Added, 1964, Royal Canadian Navy, Official

SUBMARINES

3 New Construction British-Built "O" Type

1,610 tons standard, 2,030 tons surface, 2,410 tons submerged 295 $\frac{1}{2}$ (o.a.), 241 (pp.)×26 $\frac{1}{2}$ ×18 feet 8—21 inch, internal (6 bow and Displacement: Dimensions: 18 rees 8—21 inch, internal (6 bow and 2 stern) Admiralty Standard Range diesels. Electric drive. H.P.: 2,400=12 kts. surface, H.P. 3,600=16 kts. submerged 65 (7 officers, 58 ratings)

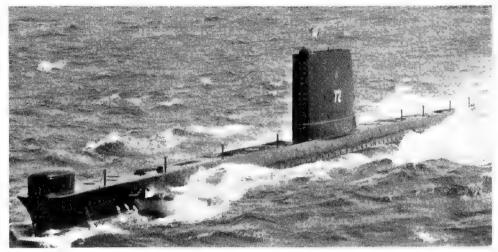
Machinery:

Complement:

The procurement of three submarines for the Royal Canadian Navy was announced by the Minister of National Defence on 11 Apr. 1962, all of the "Oberon" class built in Great Britain. The first of these attack submarines was obtained by the Canadian Government from the Royal Navy construction programme. She was laid down as Onyx but launched as Ojibwa. Two submarines of the same class are being built for commissioning in 1967 and 1968. There are some design changes to meet specific new requirements including installation of R.C.N. communications equipment and enlargement of de-icing and air-conditioning systems stallation of R.C.N. communications equipment and enlargement of de-icing and air-conditioning systems to meet the wide extremes of climate encountered in Canadian operating areas.

Nomenclature
The name Ojibwa is that of a tribe of North American Indians now widely dispersed in Canada and the U.S.A. and one of the largest remnants of aboriginal population.

Name	No.	Builders	Laid down	Launched	Commissioned
OJIBWA (ex-Onyx) OKANAGAN ONONDAGA	72	H.M. Dockyard, Chatham H.M. Dockyard, Chatham H.M. Dockyard, Chatham	27 Sep. 1962 25 Mar. 1965 18 June 1964	29 Feb. 1964 25 Sep. 1965	23 Sep. 1965



OJIBWA

1966, Royal Canadian Navy Official

I Ex-U.S. "Balao" Class

Displacement: Dimensions:

Machinery:

1,526 tons standard, 1,816 tons surface (2,425 tons submerged)
311½ × 27 × 17 feet
6—21 inch
Diesels. B.H.P.: 6,500=20 kts.
(surface)
Electric motors. S.H.P. 4,610=
10 kts. (submerged)
300 tons
12,000 miles at 10 kts.
7 officers, 72 men (additional accommodation for 2 officers. 9 men) Oil fuel: Radius: Complement:

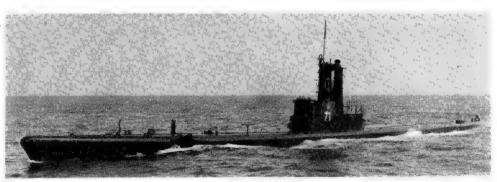
Former United States submarine of the converted "Balao" class. Loaned to the Royal Canadian Navy for five years, but this initial period which expired in May 1966 was extended for an indefinite period of from two to five years. Commissioned as N.M.C.S. Grilse at New London, Connecticut, on 11 May 1961. Based at Esquimalt, B.C. to carry out anti-submarine warfare training duties with aircraft and ships of the Pacific Maritime Command. Antennae and equipment associated with her former radar picket duties have been removed, and no deck gun is mounted.

Photographs
A photograph of Grilse (as U.S.S. Burrfish, before refit and transfer to the Royal Canadian Navy) appears in the 1962-63 edition.

GRILSE

(ex-U.S.S. Burrfish, SSR 312, ex-Amilio)

Pennant No. Launched Completed Electric Boat Co., Groton 55 71 18 June 1943 14 Sep. 1943



1966, Royal Canadian Navy, Official

Future Programme An official announcement on 22 Dec. 1964 stated: Towards the end of the five year programme it is planned to acquire a conventionally powered submarine to replace H.M.C.S. Grilse, the ASW training submarine on loan from the U.S.A. and based on the west coast. Royal Navy Division
The British Sixth Submarine Division officially ceased to exist in Apr. 1966 and was replaced by the First Canadian Submarine Squadron; but one of the submarines of the Royal Navy will be attached to the Canadian Squadron until Apr. 1967.

DESTROYER HELICOPTER CARRIERS (DDH)

4 Projected Anti-Submarine Type

3,800 tons full load
398×48×14 feet
1—5 inch L.A. (Single)
2 CHSS 2 Sea King anti-submarine helicopters
1 Limbo three-barrelled mortar
2 twin homing torpedo tubes
Gas turbines. 2 shafts.
5.H.P. 30,000=27 kts.
4,500 miles at economical speed Displacement: Dimensions: Guns: Aircraft:

A/S weapons: Machinery:

Radius:

Radius: 4,500 miles at economical speed General

It will be observed that these ships have the same hull design, dimensions and basic characteristics as the large general purpose frigates cancelled at the end of 1963 (see particulars and illustration in the 1963-64 edition). Designed as anti-submarine ships they will be fitted as leaders, with variable depth and conventional sonar, landing deck equipped with double hauldown and beartrap. Flume type anti-rolling tarks to stabilise the ships at low speed, pre-wetting system to counter radio-active fallout, enclosed citadel, and bridge control of machinery, which will now comprise gas, instead of the steam, turbines originally projected. Provision is being made for the future fitting of a short range anti-aircraft missile, It is hoped to place the contract for the lead ship in Dec. 1966, with construction to begin early in 1967.



NEW DDH (Model)

1965, Royal Canadian Navy, Official

DESTROYER ESCORTS (DDH and DDE) Anti-Submarine Frigate Type

2 "Annapolis" Class

ANNAPOLIS

NIPIGON 4 "Mackenzie" Class

MACKENZIE OU'APPELLE

SASKATCHEWAN YUKON

7 "Restigouche" Class

RESTIGOUCHE ST. CROIX TERRA NOVA CHAUDIERE COLUMBIA 2,366 tons standard (2,900 tons Displacement:

Dimensions: Guns:

2,366 tons standard (2,900 tons full load)
366 (o.a.)×42×13\ feet
2-3 inch, 70 cal. AA. (1 twin)
forward, 2-3 inch, 50 cal. AA.
(1 twin) aft. (Qu'Appelle has 3
inch, 50 cal. fore and aft: Anna
polls and Nipigon have 3 inch,
50 cal forward only)
2 Limbo three-barrelled depth
charge mortars in after well
(one Limbo in Annapolls and
Nipigon), homing torpedoes
Geared turbines, 2 shafts, S.H.P.:
30,000=28 kts. (official figure)
2 water tube
246 (12 officess, 234 ratings)

A/S weapons:

Machinery: **Boilers:** Complement:

General
These ships were
Laurent' class, but ships were developed from the original "St. class, but there are considerable differences in the three classes.

Ships fitted with helicopter hangar and landing platform are now designated DDH.

Class Variation
In providing helicopter platforms and hangars in
Annopolis and Nipigon, which also incorporate variable
depth sonar and cutaway stern (see photo) it was possible to provide for only one Limbo and one twin 3
inch, 50 cal gun.

inch. 50 cal gun.

Design Improvement
New features of the "Mackenzie" class include improved habitability; vinyl-asbestos tile deck covering throughout the ship; improved air-conditioning; extenson of pre-wetting system (to counter radio-active fallout) to cover entire exposed area of the ship; standard water-tight doors replaced by new "Dutch" door; heated wipers for bridge windows to cope with extreme temperature in northern waters.

Conversion

northern waters. Conversion
Commencing in 1966 the seven "Restigouche class ships will be progressively converted to carry variable depth sonar, advanced electronic equipment and, eventually, Asroc, the rocket-assisted homing torpedo delivery system. Terra Nova will be the first to be taken in hand in Mar. 1966. Initially Asroc will not be installed. The conversion will increase the overall length of the ships from 366 to 371 feet.

length of the ships from 366 to 371 feet.

Photographs
Starboard broadside view of Restlgouche in the 195859 edition. Starboard bow oblique aerial view of Terra
Nova and port quarter surface view of Columbia in hte
1960-61 to 1962-63 editions. Port broadside aerial view
of Kootenay in the 1959-60 to 1962-63 editions. Starboard broadside aerial view of Saskatchewan in the
1963-64 edition. Port quarter oblique aerial view of
Mackenzle and port broadside surface view of Gatlneau
in the 1963-64 and 1964-65 editions. Port broadside view of Yukon in the 1964-65 and 1965-66
editions. editions. Construction

Construction

Because of the unit construction method used, whereby a ship was under construction for months before anything appeared on the ways, it is impossible to give a true "laid down" date. The "work commencement" schedule for the "Repeat Restigouche" or "261" class is shown in the

Name No. Bullders Laid down Launched Completed Halifax Shipyards Ltd., Halifax Davie Shipbuilding & Repairing Marine Industries Ltd., Sorel, Q. Canadian Vickers Ltd., Montreal Burrard D.D. & Shipbuilding Victoria Machinery Depot Co. Burrard D.D. & Shipbuilding Canadian Vickers Ltd., Montreal Victoria Machinery (and Yarrow) Burrard D.D. & Shipbuilding Burles Shipbuilding & Repairing Halifax Shippards Ltd., Halifax Marine Industries Ltd., Sorel, Q. 235 236 256 257 July Apr. Oct. 14 Nov. 17 Feb. 4 Oct. 7 June 7 Mar. Chaudiere 13 Nov. Gatineau 1953 1954 17 June Nov. 1959 1958 St. Croix 15 15 15 21 Restigouche Kootenay Terra Nova Columbia July Aug. Nov. 1953 1952 1952 1953 Nov. June June Nov. 1958 1959 1959 258 259 260 6 June 7 Nov. 1956 11 June 15 Dec. 1959 1 25 Oct. Feb. May May Feb. July May 1962 1963 1963 1963 Mackenzie 261 1958 1961 mackenzie 'Saskatchewan Yukon Qu'Appelle Annapolis Nipigon 1 Feb. 27 July 2 May 27 Apr. 10 Dec. 1959 1959 1960 1960 1961 1961 1962 1963 16 25 14 19 262 July Oct. 263 264 265 lan. Sep. Dec. luly 266 1960 30 May

* Saskatchewan was launched by Victoria Machinery Depot Co. Ltd., but completed by Yarrow's Ltd.



NIPIGON (showing variable depth sonar, cutaway stern, helicopter platform, and hangar)

1965. Royal Canadian Navy, Official



MACKENZIE

1966, Royal Canadian Navy, Official



Destroyer Escorts (DDH, ex-DDE) Anti-Submarine Frigate Type-continued

7 "St. Laurent" Class

2,263 tons standard (2,800 tons full load)
366 (o.a.)×42×13‡ feet
2—3 inch 50 cal. AA. (1 twin)
2 Limbo three-barrelled depth charge mortars in after well.
Homing torpedoes
Geared turbines. 2 shafts, S.H.P.:
30,000=28·5 kts. (official figure)
2 water tube Displacement: Dimensions: Guns: A/S weapons: Machinery: Boilers: 2 water tube 250 (13 officers, 237 ratings) Complement:

Officially classed as major warships and as such were the first to be designed completely in Canada. These anti-submarine escort vessels of a high-speed type were built primarily for the detection and destruction of modern fast submarines. In evolving their design much assistance was received from the Royal Navy and the United States Navy. In function the vessels supersede the frigates of the Second World War and like the latter their design was worked out so that in the event of emergency they could be produced rapidly and in quantity. In speed, manoeuvrability and weapons the ships fulfil all the requirements of their class for modern sea warfare. The design provided for flush deck, low bridge, considerable use of aluminium instead of steel for the superstructure, fittings and furniture and compartmented hull.

Reconstruction

Reconstruction

All seven ships of the "St, Laurent" class have been fitted with helicopter platforms and VDS. St. Laurent was equipped with VDS late in 1961, and platform added later. Twin funnels were stepped to permit the forward extension of the helicopter hangar. Gunhouses are of fibreglass. In providing helicopter platforms and hangars in the converted "St. Laurent" class ships it was possible to retain only one three barrelled Limbo mount and only one twin 3-inch 50 cal. gun mount, Dates of recommissioning after conversion:—Assiniboine 28 June 1963, St. Laurent 4 Oct, 1963, Ottowa 21 Oct. 1964, Saguenay 14 May 1965, Skeena 15 Aug. 1965, Margaree 15 Oct, 1965, Fraser 31 Aug. 1966.

Anti-Submatine
The ships have long range sonar to probe for submarines and improved armament and electronic equipment as submarine chasers.

Name	No.	Bullders	Laid down	Launched	Completed
ST. LAURENT SAGUENAY SKEENA OTTAWA MARGAREE *FRASER ASSINIBOINE	DDE 205 DDE 206 DDE 207 DDE 229 DDE 230 DDE 233 DDE 234	Canadian Vickers, Ltd., Montreal Halifax Shipyards, Ltd., Halifax Burrard Dry Dock & Shipbuilding Canadian Vickers, Ltd., Montreal Halifax Shipyards Ltd., Halifax Yarrows. Ltd., Esquimalt. B.C. Marine Industries Ltd., Sorel, Q.	4 Apr. 1951 1 June 1951 8 June 1951 12 Sep. 1951 11 Dec. 1951	30 July 1953 19 Aug. 1952 29 Apr. 1953 29 Mar. 1956 19 Feb. 1953	29 Oct. 1955 15 Dec. 1956 30 Mar. 1957 10 Nov. 1955 5 Oct. 1957 28 June 1957 16 Aug. 1956



SAGUENAY (after conversion)

Original Construction
Design work started in 1949. Construction was delayed because the ships were subjected to constant changes due to international development in submarines and torpedoes.

Photographs
Starboard quarter view of St, Laurent and broadside view of Ottawa as first completed in 1957-58 edition. Starboard quarter oblique aerial view of Ottawa with experimental helicopter platform laid on aft, in the 1958-59 and 1959-60 editions. Port bow oblique aerial view of Saguenay in the 1957-58 to 1959-60 editions. Port broadside aerial view of Margaree in the 1958-59 to 1961-62 editions. Port broadside view of Skeena in the 1962-63 to 1964-65 editions. Port broadside surface view of Assiniboine after reconstruction in the 1963-64 edition. Starboard bow surface view of Assiniboine carrying helicopter in the 1964-65 edition. Port bow surface view of Ottawa after conversion in the 1965-66 edition.

1966, Royal Canadian Navy, Official

Gunnery
The original armament was 4—3 inch, 50 cal. AA.
(2 twin), 2—40 mm. AA. (single), and 2 Limbos.

Engineering
Propelling machinery is of British design. Yarrow & Co. Ltd., Scotstoun, Glasgow, supplied Canadian Vickers with a complete set of machinery for St. Laurent, the other ships being supplied with similar machinery manufactured in Canada. The main turbines and condensers are of English Electric design.

Appearance The con-

The converted ships of the "St. Laurent" class re-semble Annapolis and Nipigon (see previous page) but there are slight variations in funnel height and rake, etc.

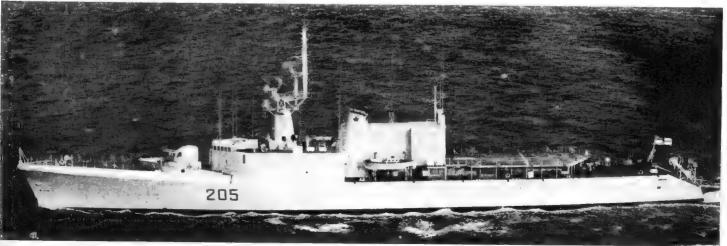
Building

* Fraser was launched by Burrard Dry Dock Co. Ltd.,
but completed by Yarrows Ltd.



ASSINIBOINE (with helicopter)

1965, Royal Canadian Navy, Official



Destroyer Escorts (DDE)—continued

I "Tribal" Class

Displacement: Dimensions:

Guns:

Tubes; A/S weapons: Machinery:

4.4 inch, 2.3 inch, 4.40 mm. AA.

4.21 inch
2. Squid triple-barrelled depth charge mortars
Parsons geared turbines. 2 shafts.
5.H.P.: 44,000=36.5 kts. designed (32 kts. sea speed)
3. Admiralty 3-drum type
520 tons
1,700 miles at 20 kts.
240 Boilers: Oil fuel: Radius: Complement:

General Sole

General Sole operational survivor of eight "Tribal" class destroyers (four built in Canada at Halifax Shipyards, Ltd., Halifax, and four in Great Britain at Vickers-Armstrongs, Ltd., Tyne) seven of which (the eighth was a war loss) were converted into destroyer escorts for anti-submarine warfare in 1953-1955. Athabaskan was again extensively refitted in 1958.

Disposais

Of her sister ships Iroquois was paid off to operational reserve on 24 Oct. 1962, Huron on 30 Apr. 1963 and Haida on 11 Oct. 1963 (all declared for disposal in 1964); Nootka was paid off for disposal on 6 Feb. 1964, Cayuga on 27 Feb. 1964 and Micmac on 31 Mar. 1964.

Second World War loss
Athabaskan (first ship of the name, built in Great Britain).

Na. DDF 219

Builders

Laid down

Launched

Completed

Halifax Shipyards, Ltd., Halifax

15 May 1944 4 May 1946

20 Feb. 1948



ATHABASKAN

CRESCENT

ATHARASKAN

1964, Royal Canadian Navy, Official

"Algonquin" Class ("Cr" Type)

Displacement:

2,100 tons standard (2,700 tons full load)
339½ (pp.), 362½ (o.a.) × 35½
× 13½ (aft full load) feet
2—4 inch (twin mount) forward, 2—3 inch (twin mount)
aft (now in shield), 2—40 mm.
Bofors AA.
1 Limbo three-barrelled depth Dimensions:

A/S weapons:

1 Limbo three-barrelled depth charge mortar. 3 launchers for Mark 43 homing torpedoes Parsons geared turbines. 2 shafts. 5.H.P.: 40,000=36-75 kts. (designed 31-25 kts. sea speed 2 Admiralty 3-drum type 580 tons 2,800 miles at 20 kts. 250

Boilers: Oil fuel: Radius:

Machinery:

Complement:

General
Originally a "Cr" class destroyer lent to the Royal
Canadian Navy in 1945 and permanently transferred
from Great Britain in 1951. Fully converted into a fast
anti-submarine escort by Esquimalt Dockyard in 1956.
Extensively refitted in 1958. Modified considerably in
1960 when one Limbo was removed to compensate for
the weight of the variable depth sonar installed, shield
fitted to 3 inch mounting, and torpedo launchers added.
Anti-Cubmarine General

Anti-Submarine The experimental variable depth sonar equipment formerly installed in Crusader was transferred to Crescent, but this was replaced in 1961 by prototype equipment for standard production and operation. No.

DDE 226

Builders

Laid down

Launched

Completed

John Brown & Co. Ltd., 16 Sep. 1943 20 July 1944 21 Sep. 1945 Clydebank

226

CRESCENT

ALGONQUIN

(ex-Valentine,

1964, Wright & Logan

Appearance
Crescent is generally very similar to Algonquin except that the main armament is mounted vice versa, i.e.
4 inch guns are mounted forward and the 3 inch guns in the after position.

Disposal
Original sister ship Crusader, partially converted
into a fast anti-submarine escort, was declared surplus
in 1963 and turned over to the Crown Assets Disposal Corporation.

"Algonquin" Class ("V" Type)

Displacement: Dimensions:

Guns:

A/S weapons:

Machinery:

Boilers: Oil fuel: Radius: Complement: 2,100 tons standard (2,700 tons full load)
339½ (pp.), 362½ (o.a.)×35¾
×13½ (aft full load) feet
2—4 inch (twin mount) aft, 2—
3 inch (twin mount) forward, 2
—40 mm. Bofors AA.
2 Squid triple-barrelled depth charge mortars
Parsons geared turbines. 2 shafts.
S.H.P.: 40,000=36·75 kts. (designed) 31·25 lets. sea speed
2 Admiralty 3-drum type
580 tons
2,800 miles at 20 kts.

General
Originally a "V" class destroyer transferred from
Great Britain in 1944. Fully converted into a fast antisubmarine escort by Esquimalt Dockyard in 1954.

Classification
Algonquin and Crescent, although they differ, were
officially designated "Destroyer Escorts—Algonquin
Class (DDE)" in 1956.

Appearance

Algonquin has her 4 inch twin gun mounting aft and 3 inch twin gun mounting forward instead of vice versa as in Crescent (see above). She now has a shield to her 3 inch guns.

No.

Laid down

Completed

DDE 224

John Brown & Co. Ltd., 8 Oct. 1942 Clydebank

2 Sep. 1943 28 Feb. 1944



ALGONOUIN

1964, Wright & Logan

Disposal

Original sister ship Sloux (ex-H.M.S. Vixen), par-tially converted into a fast anti-submarine escort, was paid off for disposal on 30 Oct. 1963.

Cancellation

The projected eight large general purpose frigates were cancelled at the end of 1963 (see full particulars and photograph of the model in the 1963-64 edition).

10 "Prestonian" Class

Name	- 1	Vo.	Lo	unche	đ
ANTIGONISH	DE	301	10	Feb.	1944
BEACON HILL	DE	303	6	Nov.	1943
JONQUIERE	DE	318	28	Oct.	1943
NEW GLASGOW	DE	315	5	Mar.	1943
NEW WATERFORD	DE	304	3	July	1943
STE. THERESE	DE	309	16	Oct.	1943
STETTLER	DE	311	10	Sep.	1943
SUSSEXVALE (ex-Valdorian)	DE	313	12	July	1944
SWANSEA		306	19	Dec.	1942
VICTORIAVILLE	DE	320	23	June	1944

Displacement: 1,570 tons standard (2,360 tons 1,370 tons standard (2,360 full load)
301\(\frac{1}{2}\) (o.a.)\(\times 36\)\(\times 16\) feet
2—4 inch, 6—40 mm. AA.
2 Squid triple-barrelled charge mortars
Triple expansion, 2 sl
1,H.P.: 5,500=19 kts. Dimensions: Guns: A/S weapons: 2 shafts. Machinery: 2 Admiralty 3-drum type 720 tons 9,600 miles at 12 kts. 140

Boilers: Oil fuel: Radius: Complement:

General

General
Originally of similar design to the British "River" class frigates, All built in Canadian shippards. 21 of this class, including three transferred to Norway, were modernised and reconstructed to flush deckers (completed anti-submarine conversion in 1953-58). All were redesignated FFE (instead of PF) in 1953, Again redesignated, as DE, in 1964. class i. Reconstruction

Reconstruction
In the original form the forecastle decl extended about two-thirds of the length with low freeboard aft, but in 1953-58 it was extended right aft, the extension being wall-sided. The extra space was devoted to improved habitability and to equipment for detecting and fighting submarines. Some of the generating machinery was changed from three steam and one diesel to two steam and two diesel, of greatly increased capacity. The former comparatively small bridge structure was replaced by a much larger one, almost totally enclosed, demanding a taller funnel to clear it. The new gear also necessitated a bigger mast although still a tripod, The propelling machinery was overhauled and some Improvement effected. The hull forward was strengthered against ice, and all the accomodation improved. Photographs

Photographs A photogra A photograph of Beacon Hill before alteration appears In the 1958-59 and 1959-60 editions, of Antigonish in the 1958-59 and 1959-60 editions, of Sussexvale in the 1960-61 to 1964-65 editions.

the 1960-61 to 1964-65 editions.

Training
The seven frigates of the Fourth Canadian Escort Squadron, Antigonish, Beacon Hill, Jonquiere, New Glasgow, Ste. Therese, Stetler and Sussexvale were fitted with a midship deckhouse to provide classrooms and messing facilities for officer cadets under sea training. The anti-submarine capabilities were not affected.

Transfers
Penetang (ex-Rouyn), Prestonian (ex-Beauharnois), and Taronto (ex-Gifford) were lent to Norway in 1956, being renamed Draug, Troli and Garm, respectively, and transferred outright on 27 June 1958.

Disposals

Disposals
Of this class Lauzon (ex-Glace Bay), DE 322, was declared surplus and paid off on 24 May 1963, Buckingham (ex-Royal Mount), DE 314, Fort Erie (ex-La Tuque), DE 312, and Lanark, DE 321, in spring 1965, and Cap de la Madeleine, Inch Arran, La Hulloise and Outremont in 1966.

OCEAN ESCORTS (DE)



NEW GLASGOW (with midship deckhouse)

1966, Royal Canadian Navy, Official



STETTLER (fitted as training ship)

1965, Royal Canadian Navy, Official



NEW WATERFORD (no midship deckhouse)

1965, courtesy Godfrey H. Walker, Esq.

OPERATIONAL SUPPORT SHIP (AOR)

Helicopter Carrier and Supply Ship

PROVIDER

Builders

Laid down

1 May 1961

Launched 5 July 1962

Combleted 28 Sep. 1963

7,300 tons light (22,000 tons full load)
20,000 tons gross, 14.700 tons deadweight
523 (pp.), 555 (o.a.)×76×32 (max.) feet
6 Sikorsky helicopters
Double reduction geared turbine.
1 shaft. S.H.P.: 21,000=20 kts.
2 water tube
1,200 tons
5,000 miles at 20 kts.
142 (11 officers and 131 ratings) Displacement: Measurement:

Dimensions: Aircraft: Machinery:

Boilers: Oil fuel:

Radius:

Complement:

Authorised (announced) on 15 Apr. 1958. Preliminary construction work began in Sep. 1960. Commissioned for service on 28 Sep. 1963. Cost \$15,700,000.

Nomenclature

Provider is the name borne during the Second World War by a RCN Fairmile motor launch parent ship.

Formerly rated as Fleet Replenishment Ship, but reclassified as Operational Support Ship in 1965.

Design
The clean, streamlined appearance of the hull follows a design to achieve high speed while fulfilling replenishments with the fleet on operations. The forward bridge structure contains the commanding officers' accommoda-

Pennant No. Davie Shipbuilding **AOR 508**



tion as well as a modern eight-berth hospital. In the superstructure also are the wheelhouse, chartroom and three positions from which there is complete control of this ship—the command control position and the two bridge wing positions. The helicopter flight deck is aft with the hangar located on this deck and immediately below the funnel. At least six Sikorsky helicopters of the type at present in service in the Royal Canadian Navy can be accommodated in the hangar space.

The flight deck is capable of receiving the largest and heaviest types of helicopter. Immediately below the flight deck are two accommodation decks for the ship's company including the main galley and combined mess-recreation spaces for chief and petty officers and men. An unusual feature of the ship is the number of winches

1964. Royal Canadian Navy, Official

on deck, a total of 23 of the electro-hydraulic type. These are used for ship-to-ship movement of cargo and supplies, as well as shore-to-ship requirements when alongside.

New Construction
Two new operational support ships are planned under the Five Year Programme. They will be improved verthe Five Tear Programme. They will be improved versions of Provider. These ships, one of which is intended for each coast, will increase the capability of the Navy's anti-submarine forces to remain continuously on station in an emergency. Alternatively, may be used to carry vehicles and their crews as well as bulk equipment, should they be needed for sealift purposes.

ESCORT MAINTENANCE SHIPS (ARE)

2 "Cape" Class

CAPE BRETON (ex-Flamborough Head)
CAPE SCOTT (ex Beachy Head, ex-Vulkaan, ex-Beachy Head)

Cape Scott
ARE 101
Burrard Dry Dock
Co., Vancouver, B.C.
8 June 1944
27 Sep. 1944
20 Mar. 1945 Name: Pennant No.: Builders: Cape Breton ARE 100 ARE 100 Burrard Dry Dock Co., Vancouver, B. 5 July 1944 7 Oct. 1944 25 Apr. 1945 Laid down: Launched: Completed:

8,580 tons standard (11,270 tons full load)
441\\ 57 \times 20 (mean at standard displacement) feet
Triple expansion. I shaft. I.H.P.: 2,500=11 kts.
2 Foster Wheeler
Cape Breton 220, Cape Scott 270 officers and men Displacement: Dimensions: Machinery: Boilers: Complement:

General

General Complement: Cape Breton 220, Cape Scott 270 officers and men General Cape Breton formerly served in the Royal Navy as the escort maintenance ship Flamborough Head; but she returned from the United Kingdom in 1951 and was in turn acquired by the Royal Canadian Navy and renamed Cape Breton in 1953, serving as a training establishment for technical apprentices at Halifax until 1958 when she sailed for Esquimalt for conversion to her present function. On 16 Nov. 1959 she commissioned on the West Coast as the second mobile repair ship; but she was paid off to reserve on 10 Feb. 1964.

Cape Scott served in the Royal Navy as the Beachy Head until 1947, when she was lent to Royal Netherlands Navy and renamed Vulkaan; but she was returned to the Royal Navy in 1950, and was acquired by the Royal Canadian Navy in 1952, being renamed Cape Scott in 1953. On 28 Jan. 1959 Cape Scott was commissioned at Halifax as the Royal Canadian Navy's first mobile repair ship. Photographs of Cape Scott appear in the 1959-60 to 1965-66 editions.

Both ships are equipped with a helicopter landing platform, a decompression

Both ships are equipped with a helicopter landing platform, a decompression chamber for the ship's divers, engineering, electrical and electronic repair shops, diesel engine repair shop, battery shop, sheet metal shop, welding shop, pipe and coppersmith's shop, plate shop and blacksmith's shop. Each ship contains an eightberth hospital. large sick bay, operating theatre, X-ray room, small medical laboratory, dental clinic and dental laboratory.



CAPE BRETON

1966, Royal Canadian Navy, Official

RESEARCH VESSELS (AGOR)

I Former Controlled Minelayer

| Displacement: 785 tons standard (870 tons full load) | Dimensions: 150 | (pp.), 157 (o.a.) × 33 × 10 feet | Diesel. 2 shafts, B.H.P.: 1,200=13 kts.

General
Authorised under the 1951 Programme. Built by Geo. T. Davie & Sons Ltd., Lauzon P.Q. Laid down on 31 Oct. 1952. Launched on 15 Sep. 1955. Completed on 28 Nov. 1955. Built as a Mine and Loop Layer, but under NATO standardised nomenclature listed as a Harbour Mineplanter. In 1957 she was rated as a Controlled Minelayer, No. NPC 114. Redesignated as a Cable Layer (ALC) in 1959, and as a Research Vessel (AGOR) in 1964.



BLUETHROAT

Royal Canadian Navy, Official

I Former "Flower" Class Corvette

SACKVILLE (AGOR 113)

1,085 tons standard (1,350 tons full load) 190 (pp.), 205 (o.a.)×33×14½ feet Triple expansion, I.H.P.: 2,750=16 lts. 2 S.E. Displacement: Dimensions: Machinery: **Boilers:**

General Built by St. John Dry Dock Co., St. John, N.B. Launched on 15 May 1941. Completed on 30 Dec. 1941. Ex-"Flower" class frigate (corvette) converted to loop layer. Employed by Naval Research Laboratories for oceanographic work. Formerly designated AN-113, but rated as ALC in 1959, as a cable layer under NATO nomenclature. Redesignated as a Research Vessel (AGOR) in 1964.



1963, Royal Canadian Navy, Official

OCEANOGRAPHIC RESEARCH VESSELS

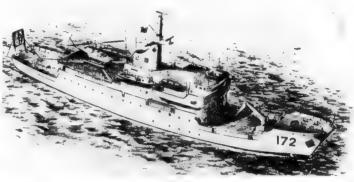
I Projected

QUEST (AGOR 172)

2,000 tons (official figures)
252 (o.g.) feet
Light helicopter
Diesel electric. 2 shafts. S.H.P.: 3,000=16 kts. (max.)
8,000 miles at 12 kts. Displacement: Dimensions: Aircraft: Machinery: Radius:

General

To be constructed for the Naval Research Establishment of the Defence Research
Board and based at Halifax. Intended for acoustic hydropraphic and general oceanographic work, in particular as related to anti-submarine warfare. Will be capable
of operating in heavy ice in the company of an icebreaker. Design is slightly
enlarged version of Endouvour (see below) with similar main engines, speed and range. Scheduled to commence construction in 1966.



QUEST

1964, Royal Canadian Navy. Official

I New Construction A/S Type

ENDEAVOUR (AGOR 171)

1,560 tons (revised official figures)
215 (w.l.),236 (o.a.)×38½×13 feet
1 light helicopter
Diesel electric. 2 shafts. S.H.P.: 2,960=16 kts.
10,000 miles range at 12 kts.
10 officers, 13 scientists, 25 ratings (plus helicopter pilot and engineer) Displacement: Dimensions: Aircraft: Machinery: Radius: Complement:

General

General

A new research ship specifically designed to meet the scientific requirements for undertaking programmes in anti-submarine research. Carries a light helicopter in a telescopic hangar. Flight deck 48 by 31 feet. Stiffened for operating in ice covered areas. Designed by the Director General Ships and the Pacific Naval Laboratory. Built by Yarrows Ltd., Esquimalt, B.C. Contract let in Nov. 1963. Accepted for service on 9 Mar. 1965. She is able to turn in 2½ times her own length. Her crowsnest is fitted with engine and steering controls for navigation in ice. A bulbous bow reduces pitch and she has anti-roll tanks. A large articulated five-ton crane is fitted forward so that the jib head can be lowered to the ocean surface and thus reduce swing on scientific instruments. Two additional 9-ton Austin-Westom telescopic cranes are fitted. There are two oceanographical winches each holding 5,000 fathoms of 5/16 inch wire, two bathythermograph winches and a deep-sea anchoring and coring winch. She has acoustic insulation in her machinery spaces.



ENDEAVOUR

1965, Royal Canadian Navy, Official

2 Former "Algerine" Class Ocean Minesweepers

FORT FRANCES (AGOR 170)

NEW LISKEARD (AGOR 168)

1.040 tons standard (1.335 tons full laod) 225 (o.a.) \times 35 \times 11 (max.) feet Triple expansion, 2 shafts, i.H.P.: 2,000=16·5 kts. 2, of 3-drum type 85 Displacement: Dimensions: Machinery: Boilers: Complement:

General
Built by Port Arthur Shipbuilding Co., Port Arthur, Ontario. Fort Frances was launched on 30 Oct. 1943, New Liskeard on 14 Jan. 1944. Formerly rated as Ocean Minesweepers (AM). Redesignated Coastal Escorts (FSE) in 1953. Refitted as survey ships and redesignated AGH in 1959. Again redesignated AGOR in 1964.

Disposals
Sister ship Oshawa, AGOR 174, was placed in reserve when Endeavour commissioned on 9 Mar. 1965. Kapuskasing, FSE 171, is on loan to the Dept. of Mines and Technical Surveys.



FORT FRANCES

1964, Royal Canadian Navy, Official

COASTAL MINESWEEPERS (MCB)

6 "Bay" Class

Name	No.	Builders:	Laid	down	Lo	unche	đ	C	om piet	ted
CHALEUR CHIGNECTO COWICHAN FUNDY MIRAMICHI THUNDER	164 160 162 159 163 161	Marine Industries Geo. T. Davie Yarrows Davie Shipbuilding Victoria Machinery Port Arthur	20 Fel 25 Oc 10 Jul 7 Ma 2 Fe 1 Se	t. 55 y 56 ir: 55 b. 56	26 26 14 22	Nov. Feb. Feb. June Feb. Oct.	57 57 56 57	19 27 28	Aug.	57 56 57

390 tons standard (412 tons full load)
140 (pp.), 152 (o.a.) × 28 × 7 (aft) feet
1-40 mm.
2 G.M. V-12 diesels, 2 shafts. B.H.P.: 2,400=16 kts. Displacement: Dimensions: Guns; Machinery: 52 tons 4,500 miles at 11 kts. 3 officers, 35 ratings Oil fuel: Radius: Complement:

General Extensively built of aluminium, including frames and decks. Four of the original 14 vessels of this class were ordered under the 1950 Programme and ten under the 1951 Programme. Named after Canadian straits and bays. Designation changed from AMC to MCB in 1954. Under the current cutback programme all ten were paid off to reserve between 28 Feb. and 20 Mar. 1964.

Transfers
Chaleur (144), Chignecto (156), Cowichan (147), Fundy (145), Miramichi (150), and Thunder (153), of this class were transferred to the French Navy in 1954; but six more of the same class with the same names were built for the Royal Canadian Navy to replace those transferred.
Comax (146), Gaspe (143), Trinity (157), and Ungava (148), of this class were transferred to the Turkish Navy under Mutual Aid arrangements in 1958.

Of the "Bay" class, Fortune, James Bay, Quinte, and Resolute were declared surplus in 1965.

The coastal minesweeper Cordova, of the YMS type, latterly rated as a support ship, was declared surplus in 1963.



MIRAMICHI

Added 1964, Royal Canadian Navy, Official

DIVING DEPOT SHIP (YMT), ex-Coastal Escort

Former "Bangor" Class Fleet Minesweeper

(YMT 180)

Displacement: Dimensions: Machinery:

590 tons standard (790 tons full load) 162 × 28 × 8½ feet
Diesel. 2 shafts. B.H.P.: 2,000=16 kts.

Complement:

General General

Launched on 9 June 1941. Former Fleet Minesweeper (AM) of the Diesel "Bangor" class, redesignated Coastal Escort (FSE) in 1953, and Clearance Diving Depot Ship (YMT) in 1959, after having been employed as a submarine Rescue Vessel.



GRANBY

Added 1959, Royal Canadian Navy, Official

DIVING TENDERS

YMT 11 Displacement: Machinery:

110 tons $88\times20\times4\frac{3}{4}$ (mean) feet G.M. diesel, B.H.P.; 228=10.75 kts.

General
YMT 11 was completed in Jan. 1962 and YMT 12 on 7 Aug. 1963, both by Ferguson Industries Ltd., Picton, Nova Scotia. They can dive four men at a time to a depth of 250 feet and are fitted with a recompression chamber. A photograph of YMT 11 appears in the 1962-63 edition.

There are small diving tenders YMT 6, YMT 8, YMT 9 and YMT 10, 70 tons, $75\times18\frac{1}{2}\times8\frac{1}{2}$ feet. 2 diesels. B.H.P.: 165. YMT 1 (46 ft.) was transferred to the Naval Research Establishment as a yard craft. YMT 3 and YMT 5 were declared surplus and sold in 1963, YMT 2 and YMT 7 are 46-ft., wooden hulled single screw vessels. Two new diving tenders, YSD 1 and YSD 2, entered service

Also torpedo recovery vessels Nimpkish, YMR 120, and Songhee, YMR 1. The yacht Orlofe, QW 3, used for officer cadet training, has been in commission since 1953.

ANTI-SUBMARINE HYDROFOIL (FHE)

I New Construction

BRAS d'OR (FHE 400)

Displacement: Dimensions:

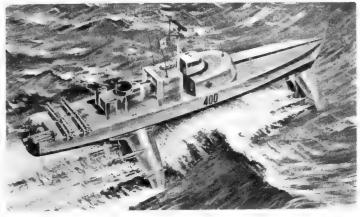
Machinery:

180 tons $151\frac{1}{2}$ (o.g.,) $\times 21\frac{1}{2}\times 15$ (hull depth), 23 (hull-borne draught), 7\(\frac{1}{2}\) (60 kts. draught). Foil base 90 feet Pratt & Whitney FT4A—2 gas turbine when foil-borne, S.H.P.: 22,000=50 to 60 kts.

Davey-Paxman diesel when hull-borne, S.H.P.: 2,000=

Davey-Paxman diesel when hull-borne, S.H.P.: 2,000=12 to 15 kts.
P. & W. ST—6 gas turbine for hull-borne boost and foil-borne auxiliary power, S.H.P.: 390

de Havilland Aircraft of Canada Ltd. Toronto, designed this prototype all-weather, ocean-going hydrofoil craft for the Royal Canadian Navy. Completion was scheduled for July 1966, contractors sea trials and acceptance trials lasting until Oct. 1966. Designated FHE for Fast Hydrofoil Escort. The supercavitating bow foil has a 22½ ft. span and the delayed cavitation main-foil has a 65 ft. span. Marine Industries Ltd., Sorel, Que, were the sub-contractor for the assembly and outfitting of the vessel, of welded all-aluminium construction. Named Bros d'Or in recognition of early work on hydrofoils by Alexander Graham Bell and F.W. Baldwin on Bras d'Or Lake, Cape Breton Island.



BRAS d'OR

1966, Royal Canadian Navy, Official

MALLARD (PCS 783)

PATROL CRAFT (PCS)

3 "Bird" Class Small Submarine Chasers LOON (FCS 780)

CORMORANT (PCS 781)

Displacement:

Dimensions: Guns: A/S weapons: Machinery: Complement: 66 tons full load
92 × 17 × 5½ feet
1—20 mm. Oerlikon AA.
Hedgehog and depth charges
21 tolsels. B:H.P.: 1,200=14 kts.

General Loon, first of the class, was commissioned on 14 Dec. 1955. Designed for harbour patrol work and training duties. Primarily of wood and aluminium construction. Fitted with sonar and anti-submarine apparatus and carry modern navigational equipment. Officially rated as Patrol Craft Submarine Chasers Small. All three were paid off to reserve on 23 May 1963. A photograph of Loon appears in the 1956-57 to 1963-64 editions. The fourth boat of this class, Blue Heron, was transferred on loan to the Marine Section of the Royal Canadian Mounted Police in 1956. (There are also YFP 312 and YFP 320, 60 ft. patrol craft.) General



CORMORANT

1964, Royal Canadian Navy, Official

AUXILIARY RESEARCH VESSEL

LAYMORE AGOR 516

YMT 12

Measurement: Dimensions: Machinery:

560 tons gross, 262 tons net 1761×32×8 feet General Motors diesel. B.H.P.: 1,000=10.8 kts.

Formerly a small supply vessel for coastal services, classed as a fleet auxiliary

Formerly a small supply vessel for coastal services, classed as a fleet auxiliary and designated AKS. Conversion into a research vessel commenced on 2 Aug. 1965 for completion in Mar. 1966. Assigned the designator AGOR. Her original sister ship Eastore was sold on 30 July 1964.

The survey ship Whitethroat, AGH 113, formerly a minelaying trawler, which was to have been retained in service until the work on Laymore was completed has been was to have been in service until the work on Laymore was completed has been declared surplus. The tug St. Anthony is being used temporarily for research work until Laymore completes.

SUPPLY VESSELS (AKS)

SCATARI (ex-Malahat) Measurement: Dimensions: Machinery:

233 tons 97 × 20 × 9 feet Diesel. 1 shaft. B.H.P.: 400

Ex-R.C.A.F. supply ship. AKS 514. Commissioned during summer as R.C.N.R, training ship on Great Lakes. LANGARA, AKS 513, is in reserve at Halifax.

GATE VESSELS (YMG)

5 "Porte" Class

Name No. Builders Completed

PORTE DAUPHINE 186 Pictou Foundry 16 May 51 24 Apr. 52 10 Dec. 52 PORTE DE LA REINE 184 Victoria Machinery 4 Mar. 51 28 Dec. 51 19 Sep. 52 PORTE QUEBEC 185 Burrard Dry Dock 15 Feb. 51 28 Aug. 51 7 Oct. 52 PORTE ST. IEAN 180 Geo. T. Davie 16 May 50 21 Nov. 50 4 June 52 PORTE ST. IEAN 180 Geo. T. Davie 21 Mar. 51 22 July 52 28 Aug. 52 Displacement: 429 tons full load Dimensions: 429 tons full load Dimensions: 125½ × 26½ × 13 feet 140 mm. AA. Machinery: Diesel. A/C Electric. 1 shaft. B.H.P.: 600=11 kts. Complement: 3 officers, 20 ratings

Of trawler design. Multi-purpose vessels used for operating the gates in the A/S booms, fleet auxiliaries, anti-submarine netlayers for entrances to defended harbours. Capable of being fitted for minesweeping. Designation changed from YNG to YMG in 1954, Porte Dauphine is on loan to the Department of Transport, Porte St. Jean and Porte St. Louis are used during the summer for the training of Reserves on the Great Lakes. Photographs of Porte St. Jean appear in the 1952-53 to 1960-61 and 1962-63 to 1965-66 editions, and of Porte Quebec in the 1961-62 edition. edition.



PORTE ST. LOUIS

Royal Canadian Navy, Official

OILERS (AO)

2 "Dun" Class DUNDURN (AOC 502)

DUNDALK (AOC 50)

Displacement: 950 tons
Dimensions: 178½×32½×13 feet
Machinery: Diesel. B.H.P.; 700=10 kts.
Small vessels designated tankers, and classed as fleet auxiliaries. A photograph of Dundalk appears in the 1949-50 to 1959-60 editions.

TUGS

3 "Saint" Class

Laid down Name No. Launched Completed SAINT ANTHONY ATA 531 15 July 1954 2 Nov. 1955 22 Feb. 1957
SAINT CHARLES ATA 533 28 Apr. 1954 10 July 1956 7 June 1957
SAINT JOHN ATA 535 1 Dec. 1953 14 May 1956 23 Nov. 1956
Displacement: 840 tons full load
Dimensions: 151½×33×17 feet
Guns: 2—40 mm. Bofors AA.
Machinery: Diesel. 1 shaft. B.H.P.: 1,920=14 kts.

Ocean tugs. Authorised under the 1951 Programme. All built by the St. John Dry
Dock Co. A photograph of Saint John appears in the 1957-58 to 1959-60 editions.

3 "Ton" Class

CLIFTON (ATA 529) HEATHERTON (ATA 527) 462 tons (ATA 527) RIVERTON (ATA 620 tons 104 (pp.), 111½ (o.σ.) × 28 × 11 feet Dominion Sulzer diesel. B.H.P.: 1,000=11 kts. RIVERTON (ATA 528)

Displacement: 462 tons
Dimensions: 104 (pp.), 111½ (o.g.) × 28 × 11 feet
Dominion Sulzer diesel. B.H.P.: 1,000=11 kts.
Complement: 17
Ocean tugs. Clifton was launched on 31 July 1944. A photograph of Heatherton appears in the 1952-53 to 1959-60 editions.

5 "Glen" Class

TNE GLENEVIS GLENLIV $80 \times 20\frac{7}{5} \times 7\frac{1}{2}$ (aft full load) feet Diesel. B.H.P.: 300=9 kts. GLENDYNE GLENBROOK GLENLIVIT II GLENSIDE Dimensions: Machinery:

Big harbour tugs. Glenlivit II is loaned to Halifax Department of Public Works. Hull numbers are YTB 501, 503, 502, 504 and 500, respectively. Sister tugs Glendevon, Y 505, and Glendon, Y 506 were taken out of service on 31 Mar. 1964 and sold to commercial interests.

3 "Wood" Class

GREENWOOD **EASTWOOD** OAKWOOD

60 (o.a.) × 15§ × 5 (aft full load) feet H.P.: 250=10 kts. Dimensions: Machinery:

Medium harbcur tugs. Used as A/S Tarket Towing Vessels. Launched, 1944. Hull numbers are YMT 550, 551 and 554 respectively. Wildwood was stricken from the Navy List in 1959. Lakewood was declared surplus in 1966. Other medium harbour tugs are: FTI, FT2. Employed as fire tugs, Hull numbers YMT 556 and 557 respectively. Sister fire tug FT3, YMT 558, was taken out of service on 31 Mar. 1964 and loaned to Dept. of Public Works, St. John's, Newfoundland.

13 "Ville" Class

LISTERVILLE LOGANVILLE MANNVILLE ADAMSVILLE BEAMSVILLE LAWRENCEVILLE

MARYSVILLE MERRICKVILLE OTTERVILLE

PARKSVILLE PLAINSVILLE QUEENSVILLE YOUVILLE

 $40\times10\frac{1}{1}\times4\frac{1}{2}$ feet Diesel. 1 shaft. B.H.P.; 150

Small harbour tugs. Majority employed on towing duties at Esquimalt and Halifax: Hull numbers are YTS 582, 583, 584, 578, 589, 577, 585, 581, 590, 579, 587, 586 and 588, respectively. Sister tugs Colville, Y 576, and Eckville, Y 580, were taken out of service on 31 Mar. 1964 for disposal, The small harbour tugs Shoveller and Valliant. Nos. YTS 591 and 575, were disposed of in 1966.

R.C.M.P. MARINE DIVISION

I "Commissioner" Class

WOOD

Displacement: Dimensions: Machinery: 600 tons 178 (o.a.) × 29 × 9 feet 2 Fairbanks-Morse diesels. 2 shafts. B.H.P.: 2,660= 16 kts.

Complement:

Built by Geo. T. Davie and Sons Ltd., Lauzon, Levis, Quebec. Completed in July 1958. Used for patrol duties on the east coast of Canada, this ship is built of steel with aluminium superstructure and steel strengthened for ice patrol.

Of the ex-fleet minesweepers of the Canadian diesel "Bangor" type, French was turned over to the Crown Assets Corporation on 2 Feb. 1961 for disposal, and Irvine was paid off into reserve on 15 Nov. 1960 for disposal. Sister ship Macbrien was deleted from the list in 1959.



WOOD

1966. Director of Marine Services, Official

FORT STEELE
Displacement:
Dimensions:
Machinery:

85 tons 118 (o.g.), 110 (w.l.) \times 21 \times 7 feet Two 18-cyl. Napier Deltic engines. 2 shafts. 2 Kamewa variable pitch propellers. B.H.P.: 5,000=over 20 kts. 16

Built by Canadian Shipbuilding & Engineering Ltd. Completed in Nov. 1958. Used as a high speed patrol craft on the east coast, this vessel is built of steel with aluminium superstructure, and has twin rudders.

The four old boats of the "Fort" class (Fairmile. "B" type motor launches) were stricken from the list in 1959.

I "Fort" Class



FORT STEELE

1960. Director of Marine Services, Official

2 "Bird" Class (Patrol Craft, PCS Type)

BLUE HERON Displacement: Dimensions:

66 tons full load $92 \times 17 \times 5\frac{1}{2}$ feet 2 diesels: B.H.P.: 1,200=14 kts. 20

Dimensions: 92 × 17 × 5\frac{1}{2} feet
Machinery: 2 diesels: B.H.P.: 1,200=14 kts.
Complement: 20

Blue Heron was built for the Royal Canadian Navy by Hunter Boat Works, Orilla.
Launched at Barrie, Ontario, in Dec. 1955. Completed on 30 July 1956. Transferred, on loan, to the R.C.M.P. Marine Section on 19 Nov. 1956 as a sea rescue craft.
Similar to Cormorant (see photograph on previous page).
Victoria was built for the R.C.M.P. by Yarrows Limited, Victoria. Completed in Dec. 1955. She is a steel copy of the wooden "Bird" class inshore patrol vessels, Loon and Mallard.

13 "Detachment" Class (Coastal) Patrol Boats

ACADIAN ADVERSUS

CAPTOR DETECTOR GANGES

INTERCEPTOR MASSET NANAIMO

TAHSIS TOFINO WESTVIEW

SIDNEY

VICTORIA

Displacement: Dimensions: Machinery:

48 tons $65 \times 15 \times 4$ feet 1 Cummins diesel. 1 shaft. B.H.P.: 410=12 kts. Coastal patrol police boats built for service on the east and west coasts.

LITTLE BOW II

Displacement: Dimensions:

27 tons
55×14×4 feet
2 General Motors turbojet engines, B.H.P.: 600=16 kts. Machinery:

These turbojet craft were built as an experiment and no additions are contemplated.

6 "Detachment" Class (Great Lakes)

CARNDUFF II CHILCOOT II

CUTKNIFE II MOOSOMIN II

SHAUNAYON II

Dimensions:

 $50\times15\times3$ feet 2 gasoline engines. B.H.P.; 750=over 20 kts.

A new class of small, fast patrol craft built for service on the Great Lakes.

There are also ten motor boats named Advance, Beaver, Fort Erle, Fort Francis II,
Fort St. James, Fraser, Kenora III, Port Alice, Sorel and Valleyfield, ranging from 26
to 36 feet in length with petrol motors, speeds up to 27 knots. Six are on the
Great Lakes and the others on the West Coast.

CANADIAN COAST GUARD

(Formerly THE CANADIAN MARINE SERVICE)

operated by The Department of Transport, Canada

Minister of Transport:

Hon. J. W. Pickersgill, P.C., M.P., M.A., B.Litt.

Deputy Minister of Transport:

Mr. John R. Baldwin, M.A., B.Litt,

Assistant Debuty Minister, Marine:

Dr. Gordon W. Stead, D.S.C., B. Comm., B.A., LL.D., C.I. Mar. E.

Director Marine Operations:

Rear Admiral Anthony H. G. Storrs, D.S.C., C.D., R.C.N. (Ret'd).

Director, Shipbuilding:
Mr. J. Rankine Strang, M.R.I.N.A., M.S.N.A. & M.E., M.A.S.N.E.

The Canadian Coast Guard, formerly the Canadian Marine Service, is the sea-going component of the Department of Transport. It was formed with Confederation in 1867 from previously existing organizations. Until the Royal Canadian Navy grew out of it immediately before the First World War, it was an armed Service. Further reorganizations have occurred since and the old name was resumed in 1960.

On 26 January 1962, the new name "Canadian Coast Guard" adopted in recognition of the tremendous expansion the fleet had undergone in the previous several years, in scope of operations, in number of vessels, and in standards of operation.

Throughout its history, the Canadian Coast Guard has supplied and maintained aids to navigation for the Department on the Atlantic and Pacific Coasts, in Hudson Bay and Strait, the Western Arctic, the Great Lakes, St. Lawrence River system, and the Mackenzie River.

The Department has long operated icebreakers for flood prevention in the St. Lawrence, extension of the coastal navigation season, and patrol of the Hudson Bay route to Churchill. In recent years the demand for assistance in Arctic and winter navigation has grown enormously and the number of icebreakers included in the fleet has increased correspondingly.

The Canadian Coast Guard now has a total of 190 vessels of all types, including some 50 ships of larger size, from about 400 tons gross to more than 6,000 tons gross. These include 10 fully strengthened icebreakers and eight lighter supply and buoy vessels capable of icebreaking.

In addition there are eight other vessels designed for special service in the Arctic. Il lighthouse supply and buoy ships, weatherships, light-ships, a Great Lakes research vessel, shallow draft ships for the Mackenzie River, St. Lawrence Ship Channel survey vessels, shorebased lifeboats and more than 130 steel landing craft for various types

of Arctic use.
Since 1954 the Department has assumed increasing responsibility for Since 1954 the Department has assumed increasing responsibility for the re-supply of numerous and widely scattered military and civil Arctic installations until by 1961 its operations covered the whole Canadian North. In the Eastern Arctic, the supply function is carried out by convoys of chartered merchant ships escorted by icebreakers. The icebreaker masters act as convoy commodores and are assisted by northern supply vessels. Ice reconnaissance is provided by fixed wing aircraft under the direction of the Meteorological Branch of the Department with close reconnaissance being flown by helicopters carried in aircraft under the direction of the Meteorological Branch of the Department with close reconnaissance being flown by helicopters carried in the icebreakers and assisted by ice observers of the Meteorological Branch. The use of photography from space satellites for ice reconnaissance is in the development stage. Ship-shore handling of supplies is carried out by a fleet of landing craft maintained in the North and operated by the Canadian Coast Guard. In the Western Arctic, an icebreaker of the Department covers supply convoys. Total Arctic and the supply is a supply supplyed to the supply supplyed to the supply in the supply in the supply is the supply in the supply in the supply in the supply is the supply in the supply in the supply in the supply is supplyed to the supply in the supply in

commercial winter navigation in the Gulf of St. Lawrence is supported by icebreakers based on the Atlantic Coast area and directed from an operations room in Sydney, Nova Scotia. Ice information is provided by the Meteorological Branch as in the case of the Arctic

operation.

In the Arctic and the Gulf of St. Lawrence, advantage is taken of the In the Arctic and the Gulf of St. Lawrence, advantage is taken of the presence of Canadian Coast Guard vessels to afford opportunities for hydrographers, oceanographers and other scientists to extend their knowledge of the waters of Canada which can only be navigated by icebreakers. Information from these programmes is in turn used to support and develop the ability to navigate in ice conjested waters. The specialists carried for these purposes are provided by other Departments of the Canadian Government. Some of this work has recently been extended into arctic areas not previously traversed by ship. On the Great Lakes one vessel, on loan from the Royal Canadian Navy, is operated on behalf of a group of research organizations in the fields of operated on behalf of a group of research organizations in the fields of

meteorology and limnology.

The Canadian Coast Guard co-ordinates the marine element in the national air sea rescue organization which is under the overall control of the Royal Canadian Air Force. This involves the provision of special or the Royal Canadian Air Force. Inis involves the provision of special vessels for search and rescue purposes. These include five 95 ft. cutters, three 70 ft. cutters and two 38 ft. cutters. Two of the largest types serve on the Pacific Coast, two on the Atlantic Coast, and one on the Great Lakes in Summer and the East Coast in Winter. The three 70 ft. vessels are used on the Great Lakes. The smallest type are stationed on the West Coast. Larger deep-sea vessels for this function are in the

design stage.

Weather Station "Papa" in the mid-Pacific Ocean is maintained by ships of the Canadian Coast Guard, the specialist staff being supplied

by the Meteorological Branch of the Department. Oceanographic work is also carried out from these ships. Two new weatherships to replace the present frigates on loan from the Royal Canadian Navy are being built for this service.

The Department of Transport is responsible for the maintenance and improvement of the St. Lawrence Ship Channel from Montreal to the sea. Vessels of the Canadian Coast Guard carry out the necessary surveys.

NEW CONSTRUCTION

FULL ICEBREAKER

The construction of a new icebreaker for use in the Gulf of St. Lawrence and East Coast waters is now under way at the yard of Canadian Vickers Limited, Montreal. She will have a full load displacement of 6,320 tons with an overall length of 295 ft., a breadth of $62\frac{1}{2}$ ft. and a load draft of 20 ft. Propulsion will comprise four diesels and two gas turbines powering two electric motors of 6,000 shaft horse power each, to twin screws and giving a spead of 15 knots. She will carry two landing craft, and a helicopter operated from a flight deck equipped with a "telescopic" hanger. Completion as scheduled for Autumn 1968.

An icebreaking buoy tender and lighthouse supply ship is being built at the yard of Davie Shipbuilding Limited,, Levis, Que., as a replacement for the small icebreaker CCGS "Saurel", which is due for retirement and the non-icebreaking buoy vessel "Chesterfield", which is also at the end of its economically useful life. The new ship will have a full load displacement of 3096 tons, with an overall length of 231 feet, a breadth of 49 feet and a load draught of 16 feet. Its propulsion will be diesel-electric, totalling 4,250 shaft horsepower and driving two propellers. It will be fitted with a helicopter deck and telescopic hangar for the aircraft. Conpletion is scheduled for 1967.

copter deck and telescopic hangar for the aircraft. Conpletion is scheduled for 1967.

An icebreaking lighthouse supply and buoy vessel is being built at Port Weller Dry Docks Ltd., Port Weller, Ont., as a replacement for the old steamship CCGS "Safeguarder", which will be retired. The vessel will be 181 feet, six inches long, 38 feet in breadth and will have a loaded draft of 12 feet. Her load displacement will be 1,270 tons. Completion is scheduled for autumn, 1967.

A sounding vessel for service with the St. Lawrence Ship Channel Division of the Department of Transport is being built at Collingwood Shipyards Collingwood, Ont. It will be a replacement for CCGS "Frontenac", which has been in service since 1930. The sounding vessel will be 166 feet, six inches long; 35 feet in breadth and will have a loaded draught of nine feet, six inches. It will be driven by two diesel engines with a total of inches. It will be driven by two diesel engines with a total of 1,350 shaft horsepower and will have a load displacement of 850 tons. Completion is scheduled for autumn, 1966.

In addition to those already mentioned the following ships are

in the planning stages:

in the planning stages:

A marine agency tender for service at the lakehead (Port Arthur Marine Sub-Agency); replacements for the Northern Supply Vessels (converted LSTs) CCGS "Gannet" and CCGS "Puffin"; icebreaking supply and buoy vessel for the Prescott, Ont. District Marine Agency (replacement for CCGS "Greneville"); Marine agency tenders for St. John's Newfoundland (replacement for CCGS "Sea Beacon") and Saint John, New Brunswick District Marine Agencies; a supply and buoy vessel for Dartmouth, Nova Scotia District Marine Agency (replacement for CCGS "Brant"); marine agency tender for the lower Lake Erie-Lake St. Clair regon; 200-foot deep sea search and rescue cutters (possibly six such vessels).

SUMMARY

Full icebreakers		***	• • •	•••	• • •	10
Light Icebreaker Buoy Vessels			***		•••	8
Icebreaking Cable Repair Vessel	***	***				1
Special Arctic Service Vessel	***			***	•••	.!
Lighthouse Supply and Buoy Vessels	***		***		***	- 1]
Northern Supply Vessels	***	***		***	***	6
Northern Service Depot Ship	***	***	• • •	***		1
St. Lawrence Ship Channel Work	***	***	* ***	***		5 3 1 5 3
Weather Ships	***	***				5
Great Lakes Marine and Meteorolog		earch				Ļ
Search and Rescue Cutters, 95 feet		***	• • •	***	***	3
Search and Rescue Cutters, 70 feet		***		***	***	3
Search and Rescue Cutters, 38 feet		***		***	* * *	4
Mackenzie River Shallow Draft Bud	y Vess	sels		***	***	
Steel Landing Craft	***			001	***	114
Lightships	***			***	***	3
Marine Agency Tenders	***	***				9
Shore Based Lifeboats	• • •	+ 4 0		• • •		3
Total, Canadian Coast Guard	Vessel	s	•••	***		190
Other vessels operated by	the De	partme	ent of	Transc	ort	
Pilotage	***	***	***			14
Canals Works	***	***	***	•••	***	37

						51
Total vessels operated by the I	Denarti	ment (of Tra	nsport	inch	ıdina
Canadian Coast Guard, Pilotage					***	241
Canadian Coast Guard, Photage	arru	-011917	***	***	***	-11

WEATHER SHIPS

2 New Construction

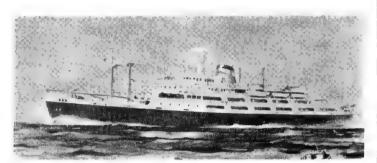
QUADRA

VANCOUVER

Displacement: Dimensions: Machinery: Radious: Complement:

5,340 tons full load 404½×50×17 feet Turbo-electric. 2 shafts 8,400 miles at 14 kts.

Construction of two turbo-electric twin screw weather and oceanographic vessels for Pacific Ocean service is now under way at Burrard Drydock Limited, North Vancouver, B.C. They will replace the existing Coast Guard weather ships which marr Ocean Station "Papa" 900 miles west of the British Columbia coast. They will have bow water jet reaction system to assist steering at slow speeds. Flume stabilization systems will be fitted. They will be turbo-electric powered, with oil-fired boilers to provide the quiet operation needed for vessels housing much scientific equipment. Their complement will be about 96, including 15 technical officers such as meteorologists, oceanographers and electronics technicians.



VANCOUVER (Artists impression) 1966, Canadian Coast Guard, Official

3 Former "River" Class Frigates

Name	Builders	Launched		
ST. CATHERINES STONETOWN ST. STEPHEN	Yarrows Limited, Esquimalt, B.C. Canadian Vickers Limited, Montreal Yarrows Limited, Esquimalt, B.C.	28	Dec. Mar. Feb.	1944

Displacement: Measurement: Dimensions: Machinery; Boilers: Oil fuel:

Radius:

1,490 tons standard (2,216 tons full load)
1,895 tons gross
283 (pp.), 301½ (o.a.)×36½×17½×13½ feet
Triple expansion. 2 shafts, 1.H.P.: 3,700=14 kts. (max.)
2 Admiralty 3-drum type
640 tons
9,500 miles at 12 kts.

General

Former frigates of the Royal Canadian Navy acquired by the Department of Transport and converted to weather ships in 1950. Armament removed. General



ST. CATHERINES (in C.G.)

1963, Canadian Coast Guard, Official



STONETOWN (when in R.C.N.)

Royal Canadian Navy, Official

CABLE REPAIR SHIP

I New Construction

JOHN CABOT

Displacement: Dimensions: Machinery:

6.375 tons full load

Radius: Complement: 85 officers and men

Combination cable repair ship and icebreaker, Built by Canadian Vickers Limited, Montreal. Laid down in May 1963, launched on 15 Apr. 1964 and completed in July 1965. Designed to repair and lay cable over the bow only. For use in East Coast and Artic waters, Bow water jet reaction manoeuvring system, heeling tanks and Flume stabilisation system. Three circular storage holds handle a total of 400 miles of submarine cable. Personnel include technicians and helicopter pilots, the ship being designed for use with that type of aircraft.



JOHN CABOT

1966, Canadian Coast Guard, Official

NORTHERN SUPPLY VESSELS

7 Former Tank Landing Craft (LCT 8s)

AUK

EIDER

GANNET

PUFFIN

RAVEN SKUA

MINK

Measurement; Dimensions; Machinery;

1,083 tons to 1,104 tons gross 225 (pp.), $231\frac{1}{4}$ (o.a.) \times 38 \times 14 \times 3 feet Diesel. S.H.P.: 1,000=9 kts. (max.)

Construction
Converted LCT (8)s, acquired from Great Britain in 1957-61. Built by Harland & Wolff, Belfast (Puffin and Raven), Sir Wm. Arrol & Co. Ltd., Glasgow (Elder and Gannet) and Alexander Findley, Dumbarton (Auk). All completed in 1946. A photograph of Skua appears in the 1962-63 to 1964-65 editions.
Sister ship Nanook, officially rated as a Northern Service Depot Ship, is in reserve.



GANNET

1965. Canadian Coast Guard. Official

2 Former Tank Landing Craft (LCT 4s)

MARMOT
Displacement:
Measurement:
Machinery:

586 tons loaded $187\frac{1}{4} \times 33\frac{1}{4} \times 4$ feet Diesel. S.H:P.: 920=8 kts. (max.)

Construction
Converted LCT(4)s acquired from Great Britain in 1958. Completed in 1944.
Officially rated as Steel Landing Craft for Northern Service.



MINK

1963, Canadian Coast Guard, Official

FULL ICEBREAKERS

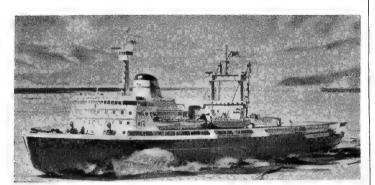
I New Construction

Displacement: Dimensions:

13,300 tons full load 366½ (o.a.) 80×43×31 feet Turbo-electric. 3 shafts. B.H.P.: 24,000=13 kts. cruising Machinery:

The construction of a new icebreaker for service in the Artic and the Gulf of St. Lawrence is under way at Canadian Vickers Limited, Montreal, She will be larger than any of the present Coast Guard icebreakers. She will be triple screwed. She will carry two helicopters, with flight deck, hangar below decks and elevator. She is expected to cost \$18,719,075.

Another new full icebreaker is being built (see full details on page 43).



NEW ICEBREAKER (Artist's impression)

1966, Canadian Coast Guard, Official

JOHN A. MACDONALD

Displacement: Measurement: Dimensions:

Machinery:

9,160 tons full load 6,186 tons gross 315 × 70 × 33 × 28 feet Diesel-electric S.H.P.: 15,000=15·5 kts. (designed)

Construction Completed by Davie Shipbuilding Limited, Lauzon, Port Quebec, in Sep. 1960.



IOHN A. MACDONALD

1966, Canadian Coast Guard, Official

WOLFE

Displacement:

Measurement: Dimensions; Machinery;

3,005 tons full load 2,022 tons gross 220 × 48 × 21 × 16 feet Steam reciprocating. I.H.P.: 4,000=13 kts. (designed)

Construction
Built by Canadian Vickers Limited, Montreal, Completed in Nov. 1959.



WOLFE

1963, Canadian Coast Guard, Official

Full Icebreakers—contd.

CAMSELL
Displacement:
Measurement:
Dimensions:
Machinery: 3,072 tons full load 2,020 tons gross 223 $\frac{1}{2} \times 48 \times 21 \times 16$ feet Diesel-electric. S.H.P.: 4,250=13 kts. (designed)

Construction
Completed by Burrard Dry Dock Company Limited, Vancouver, B.C. in Oct. 1959.



CAMSELL

1963, Canadian Coast Guard, Official

SIR HUMPHREY GILBERT

Displacement:

Measurement:

Dimensions: Machinery:

3,000 tons full load 1,930 tons gross 220 × 48 × 21 × 16} feet Diesel-electric. S.H.P.: 4,250=13 kts. (designed)

Construction
Completed by Davie Shipbuilding Limited, Lauzon, Port Quebec, in June 1959.



SIR HUMPHREY GILBERT

1963, Canadian Coast Guard, Official

MONTCALM

Displacement: Measurement: Dimensions: Machinery:

3,005 tons full load 2,017 tons gross 220 × 48 × 21 × 16½ feet 5team reciprocating, I.H.P.: 4,000=13 kts. (designed)

Construction
Completed by Davie Shipbuilding Limited, Lauzon, Port Quebec, in June 1957.



MONTCALM

1962, Canadian Coast Guard, Official

Full Icebreakers-contd.

Ex-R.C.N. Arctic Patrol Vessel

LABRADOR

Builders: Ordered: Laid down Launched: Completed: Transferred Marine Industries Limited, Sorel, Quebec Feb. 1949 18 Nov. 1949 14 Dec. 1951 8 July 1954 (for Royal Canadian Navy) Feb. 1958 (to Department of Transport)

Displacement: Measurement: Dimensions: Guns: Aircraft: Machinery: Complement:

6.490 tons full load 3.823 tons gross 269 (pp.), 290 (o.d.) \times 63½ \times 37½ \times 29 feet Mounting for 2.—40 mm. forward (guns removed) Provision for 2 helicopters Diesel-electric S.H.P.: 10.000=16 kts. (designed) 218 (naval crew) .490 tons full load

Now rated as a full icebreaker. When commissioned in the Royal Canadian Navy she was rated as an Arctic Patrol Vessel, Helicopter Carrier and Icebreaker. Her original designation was AGB, changed to AW. No. 50 in 1954. She was the first naval vessel to sail through the North West Passage and to circumnavigate North America, when she was Canada's largest and most modern icebreaker. She has hightensile steel sides 1½ inches thick, and heeling tanks built into her. Another new feature was an aircraft hangar and a flight deck built aft which accommodated and provided a platform for helicopters to operate. The ship also carried two landing craft strengthened to resist ice formation. In addition to the latest navigational devices she is equipped with instruments for hydrography, oceanography, meteorology, cosmic ray research, ice reconnaissance and other scientific purposes. She is fitted with Denny Brown stabilisers, and her propelling machinery can be controlled from the bridge. She was transferred, on loan, to the Department of Transport and subsequently acquired from the Royal Canadian Navy outright.



LABRADOR

1965, Canadian Coast Guard, Official



LABRADOR (when in R.C.N.)

Royal Canadian Navy, Official

d'IBERVILLE

Displacement: Measurement: Dimensions: Machinery;

9,930 tons full load 5,678 tons gross 310×66½×40×30¼ feet Steam reciprocating. I.H.P.: 10,800=15 kts. (designed)

Construction
Completed by Davie Shipbuilding Limited, Lauzon, Port Quebec, in May 1953.



d'IBERVILLE

1964, Canadian Coast Guard, Official

Full Icebreakers-contd.

ERNEST LAPOINTE Displacement: Measurement:

Dimensions: Machinery:

1.675 tons full load 1.179 tons gross $184\times36\times17\times15\frac{1}{2}$ feet Steam reciprocating. I.H.P.: 2,000=13 kts. (designed)

Construction
Completed by Davie Shipbuilding Limited, Lauzon, Port Quebec, in Feb. 1941.



ERNEST LAPOINTE

1966, Canadian Coast Guard, Official

N. B. McLEAN

5.034 tons full load 3.254 tons gross $277 \times 60 \times 31 \times 19^{\circ}$ 6 Steam reciprocating. I.H.P.: 6,500=13 kts. (max.)

N. B. McLEAN

Displacement: 5.034 tons full load

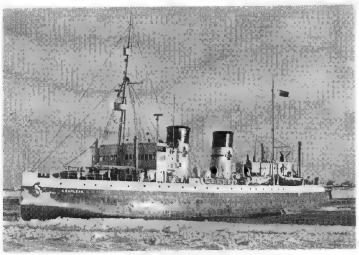
Measurement: 3.254 tons gross

Dimensions: 277 × 601 × 31 × 19·6

Machinery: Steam reciprocating. I.H.P.: 6,500=13 kt

Construction

Completed by Halifax Shipyards, Limited, Halifax, N.S., in 1930.



N. B. McLEAN

1966. Canadian Coast Guard, Official

SAUREL

Displacement: Measurement: Dimensions: Machinery:

1,892 tons full load 1,176 tons gross 212 × 42 × 21 × 14½ feet Steam reciprocating. I.H.P.: 3,000=11 kts. (max.)

Construction
Completed by Canadian Vickers Limited, Montreal, in 1929.



SAUREL

1963, Canadian Coast Guard, Official

SEARCH AND RESCUE CUTTERS

RACER RALLY 153 tons gross 95½ × 20 × 10½ × 6½ feet Diesel. B.H.P:: 2,400=20 kts. (designed) Measurement:

Measuremen Dimensions: Machinery:

Construction
Built by Yarrows Ltd., Esquimalt, B.C.; Davie Shipbuilding Ltd., Lauzon, P.Q.;
Ferguson Industries, Picton, N.S.; Burrard Drydock, Vancouver; and Kingston Shipyard, respectively. All completed in 1963.



RELAY

1964, Canadian Coast Guard, Official

SPINDRIFT Measurement: Dimensions: Machinery: SPRAY

SPUME

57 tons gross 70×16½×9×44 feet 2 diesels. B.H.P.: 1,500=19 kts. (designed)

Construction
Built by Cliff Richardson Boats Ltd., Meaford, Ont.; J. J. Taylor & Sons, Ltd.,
Toronto; and Grew Ltd., Penetanguishene, Ont., respectively. Completed in 1963-64.



SPINDRIFT

1966, Canadian Coast Guard Official

LIGHT ICEBREAKERS

Displacement: Dimensions: Machinery:

1,300 tons full load 179 $\frac{1}{2} \times 38 \times 15\frac{1}{2} \times 12$ feet Diesel-electric. S.H.P.: 2,000=12 kts.

Construction
Completed by Canadian Vickers in 1962. Photograph in 1963-64 edition.

SIMON FRASER

SIMON FRASER

Displacement: 1,876 tons full load

Measurement: 1,357 tons gross

Dimensions: 204½ × 42 × 18½ × 14 feet

Machinery: Diesel-electric. S.H.P.: 2,900=13·5 kts. (designed)

Construction

Completed by Burrard Dry Dock Company Limited, N. Vancouver in Feb. 1960.

THOMAS CARLETON

1,532 tons full load 180 × 42 × 19 × 13 feet Diesel. B.H.P.: 2,000=12 kts. (designed) Displacement: Dimensions: Machinery:

Construction
Built by Saint John Dry Dock Limited, Saint John, N.B: Completed in 1960.

TUPPER

Displacement: 1,872 tons full load
Measurement: 1,357 tons gross
Dimensions: 2044 × 42 × 18½ × 14 feet
Machinery: Diesel-electric. S.H.P.: 2,900=13·5 kts. (designed by Marine Industries Limited, Sorel, Quebec. Completed in Dec. 1959.

1.872 tons full load 1.357 tons gross 204½ × 42 × 18½ × 14 feet Diesel-electric. S.H.P.: 2,900=13·5 kts. (designed)

ALEXANDER HENRY

2.497 tons full load 1.647 tons gross 210 × 43 \dark × 21 × 16 feet Diesel. B.H.P.: 3,550=13 kts. (designed) Displacement: Measurement: Dimensions: Machinery

Construction
Built by Port Arthur Shipbuilding Limited, Port Arthur. Completed in July 1959.

Built by Port Arthur Shipbuilding Limited, Port Arthur. Completed in July 1959.

SIR WILLIAM ALEXANDER

Displacement: 3,555 tons full load

Measurement: 2,153 tons gross
Dimensions: 227½ × 45 × 21½ × 17½ feet
Machinery: Diesel-electric, S.H.P.: 4,250=15 kts. (designed)

Construction

Built by Halifax Shipyards, Limited, Halifax. Completed in June 1959. Equipped with Flume Stabilisation System.

WALTER E. FOSTER

2,718 tons full load

Displacement: Measurement:

2,718 tons full load 1,672 tons gross 229 $\frac{1}{4} \times 42\frac{1}{2} \times 19\frac{1}{2} \times 16$ feet Steam reciprocating, I.H.P.: 2,000=12·5 kts. (designed)

Dimensions: 229½ × 42½ × 19½ × 16 feet
Machinery: Steam reciprocating, I.H.P.: 2,000=12·5 kts. (
Construction
Built by Canadian Vickers, Limited, Montreal. Completed in Dec. 1954.

EDWARD CORNWALLIS
Displacement:
Measurement:
Dimensions:
Machinery:

3,700 tons full load 1,965 tons gross 259 \times 43 $\frac{1}{2}$ \times 20 $\frac{1}{2}$ \times 18 feet Steam reciprocating, 1.H:P.: 2,800=13.5 kts. (designed)

Construction
Built by Canadian Vickers, Limited, Montreal. Completed in Dec. 1949.
Photograph in the 1963-64 to 1965-66 editions.
All the above are officially rated as Light Icebreaker, Supply and Buoy

SPECIAL ARCTIC SERVICE VESSEL

C. D. HOWE

Radius

Displacement: Measurement: Dimensions: Machinery:

5,170 tons full load 3,628 tons gross 276 (pp.), 295 (o.a.) \times 50 \times 26 \times 18 $\frac{1}{2}$ feet Steam reciprocating, I.H.P.: 4,000=13 kts. (10,000 miles, with 50 per cent reserve of fuel Lift of forward crane 30,000 lb. (max.)

Capacity:

General

Built by Davie Shipbuilding Limited, Lauzon, Quebec Harbour. Launched in Sep. 1949. Completed in June 1950. Eastern Arctic Patrol Vessel and Supply Ship. Designed as multi-purpose vessel, being icebreaker, meteorological and surveying vessel, hospital ship, and potential fleet auxiliary for naval use in war. With an icebreaker hull she was of a novel and streamlined design. She is equipped with the latest Arctic navigational apparatus, and is reinforced for limited work in ice.



C. D. HOWE

1962. Canadian Coast Guard. Official

SUPPLY VESSELS

MONTMORENCY
Displacement:
Dimensions:

Machinery:

1,006 tons full load $163 \times 34 \times 14\frac{1}{2} \times 11$ feet Diesel. B.H.P.: 1,200

Construction
Built by Davie Shipbuilding Limited, Lauzon, Port Quebec. Completed in Aug. 1957.
750 tons gross measurement.



MONTMORENCY

1963, Canadian Coast Guard, Official

CHESTERFIELD

1.627 tons full load $180\times32\times14\frac{1}{2}\times12\frac{1}{2}$ feet Steam reciprocating. I.H.P.: 700 Displacement: Dimensions: Machinery:

Construction
Built by Collingwood Shipyards Limited, Completed in 1928, 735 tons gross.

Displacement:
Dimensions:
Machinery: 2.071 tons full load $200\times38\times17\frac{1}{2}\times12$ feet Steam reciprocating. I.H.P.: 1,500

Construction
Built by Collingwood Shipyards Limited. Completed in 1912. 1.161 tons gross.

MONTMAGNY

therein the state of the state Bros VERENDRYE

General
400 tons full load, 297 tons gross, 125×26×10×7 feet. Diesel. 760 B.H.P.
Built by Geo. T. Davie & Sons, Ltd., Lauzon. Completed in Oct. 1959.

SIR JAMES DOUGLAS

General 736 tons full load, 564 tons gross, $150 \times 30 \times 13\frac{1}{7} \times 10\frac{1}{7}$ feet. Diesel. 1,000 B.H.P. Built by Burrard Drydock. N. Vancouver, B.C. Completed in Nov. 1956.

ALEXANDER MACKENZIE

General 736 tons full load, 556 tons gross, $150 \times 30 \times 13\frac{1}{7} \times 10\frac{1}{7}$ feet. Diesel. 1,000 B.H.P. Built by Burrard Drydock. N. Vancouver, B.C. Completed in 1950.

C. P. EDWARDS

General 500 C. P. Fill load 338 tons gross 1441×27×171×91. Second reciprocessing.

571 tons full load, 338 tons gross, 144½×27×17½×9½. Steam re 375 I.H.P. Built by Collingwood Shipyards Limited. Completed in 1946. reciprocating.

375 I.H.P. Built by Collingwood Shipyards Limited. Completed in 1946. BRANT
General
285 tons gross, 124\(\frac{1}{2}\times 23\(\frac{1}{2}\times 12\) feet. Steam reciprocating. 62 I.H.P. Built by GOVERNMENT Shipyard, Sorel, Quebec. Completed in 1927.

GRENVILLE

General 677 tons full load, 479 tons gross, 155 × 30½ × 13½ × 9½ feet. Steam reciprocating. 900 I.H.P.: Built by Polson Iron Works Limited. Completed in 1915. SAFEGUARDIE

General 665 665 tons gross, $160\times29\times11\frac{1}{2}$ feet. Steam reciprocating, 1,350 l.H.P. Built at Southampton, United Kingdom. Completed in 1914.

Administration

The Royal Ceylon Navy was formed on 9 Dec. 1950 when the Navy Act was proclaimed.

Captain of the Navy:

Commodore Rajanathan M.V.O. Kadirigamar,

I Ex-Canadian "River" Class

CEYLON

Services Attaché in London: Major J. E. D. Perera, CE.

Personnel

Naval Base

1963: 2,000 (150 officers and 1,850 ratings) 1964: 1,720 (140 officers and 1,580 ratings) 1965: 1.656 (118 officers and 1,538 ratings)

The Naval Base is established at Trincomalee, 1965: 1.656 which was a British base from 1795 until 1957. 1966: 2.060 (160 officers and 1,900 ratings)

FRIGATE

Displacement: 1,445 tons standard (2,360 tons

Dimensions:

1.445 tons standard (2,360 tons full load)
283 (pp.), 295½ (w.l.), 301½ (o.a.)×36½×13½ feet
1—4 inch, 3—40 mm. AA.
Tripple expansion. 2 shafts.
1.H.P.: 5,500=20 kts.
2. of three-drum type
585 tons
6,000 miles at 12 kts.
160 Gune Machinery:

Boilers: Oil fuel: Radius: 160

Complement:

Acquired by Israel in 1950 and sold by Israel to Ceylon in 1959. Guns above replaced 3—4.7 inch, 8—20 mm, in 1965. Disposals

Disposus
Sister ship Mahasena (ex-Mivtakh, ex-Canadian
Violetta, ex-H.M.C.S. Orkney) was sold early in June
1964 to a Hong Kong shipbreaker

Disposals of Escort Minesweepers
Parakrama (ex-H.M.S. Pickle) was sold in June
1964 to a Hong Kong scrapyard, and Vijaya (ex-H.M.S.
Flyingfish, ex-Tillsonburg) was returned to Britain.

Pennant No .: F 232 (ex-Misnak, ex-H.M.C.S. Hallowell)

Builders: Canadian Vickers Ltd., Montreal, P.Q.

Launched: 8 Aug. 1944



GAIABAHU

GAIABAHU

1963, Royal Ceylon Navy, Official

HYDROFOIL CRAFT

I New Construction

Dimensions:

22½×9½ (hull), 10½ (o.g.) feet (Depth over side moulded: 3 feet; Draught at anchor: 3½ feet; Draught at speed: 1½ feet) official figures 2 Volvo Penta Aquamatic 100 H.P. engines. Total H.P.: 200=40 kts.

Machinery:

new type of short hydrofoil craft added to the Navy List in 1964.



HYDROFOIL CRAFT

1964, Royal Ceylon Navy, Official

PATROL BOATS

2 New Construction

Displacement:

Dimensions: Machinery:

15 tons 45½×12×3 feet

2 Thornycroft K6SMI engines, B.H P.: 500=25 kts.

Fast twin scriw motor launches built by Thorneycroft (Malaysia) Limited in Singapore for the Ceylon Navy. The hulls are of hard chine type with double skin teak planking. Equipped as patrol boats with radar, radio, searchlight etc. Ordered in 1965 and completed in 1966.



1966, Royal Ceylon Navy, Official

Disposal of Seaward Defence Boat
The seaward defence boat Kotiya (ex-H.M.S. Doxford) sank in Trincomalee
Harbour during the cyclone of 22 Dec. 1964, and will be disposed of after

Boom Defence Vessel

The boom defence vessel Baron was purchased from Great Britain by the Colombo Port Commission (particulars and photograph in the 1958-59 and 1959-

PATROL BOATS

2 "Hansaya" Class

LIHINIYA

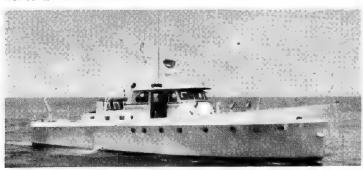
TARAWA

HANSAYA

Displacement: Dimensions: Machinery:

36 tons $63\frac{1}{2}$ (pp:). 66 (o.a.)×14×4 feet 3 General Motors diesels

"Hansaya" class long patrol boats built for the Royal Ceylon Navy at Venice by the Korody Marine Corporation, Another photograph of Lihiniya appears in the 1957-58 to 1959-60 editions.



LIHINIYA

Displacement:

Dimensions:

Machinery:

1964. Royal Ceylon Navy, Official

SERUWA

4 "Seruwa" Class

DIYAKAWA KORAWAKKA

13 tons 46 (pp.), 48 (o.a.)×12×3 feet 2 Foden FD.6 diesels.

"Seruwa" class short patrol boats. A photograph of Diyakawa appears in the 1957-58 to 1959-60 editions. (ex-Adept, ex-Empire Barbara)



KORAWAKKA

1964. Royal Ceylon Navy, Official

TUG

I "Empire" Class

ALIYA (ex-Adept, ex-Empire Barbara)

Displacement: 503 tons full load
Dimensions: 105×26½×12½ feet
Machinery: Triple expansion, 1.H.P.: 850=10 kts.
Built by Cochrane & Sons Ltd., Selby, Yorks, England. Transferred from Great
Britain. Decommissioned in 1940 to be sold, but it was officially stated in 1966
that this intention has been rescinded and a decision has been made to refit this seagoing tug and commission her in 1966.

CHILE

Administration

Minister of National Defence: Señor Juan de D. Carmona.

Commander-in-Chief of the Navy: Almirante Jacobo Neumann.

Chief of the Naval Staff: Contra Almirante Jorge Swett.

Chief of the Chilean Naval Mission in Great Britain and Naval Attaché in London: Capitan de Navio Patricio Carvajal.

Chief of the Chilean Naval Mission in U.S.A. and Naval Attaché in Washington: Capitán de Navio René Roman

Personnel

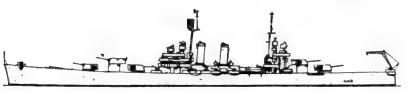
1966:15,000 (1,000 officers and 14,000 men)

Mercantile Marine

Lloyd's Register of Shipping 126 vessels of 295,903 tons gross

Silhouettes

Scale: 150 feet=1 inch



PRAT



WILLIAMS



O'HIGGINS



BLANCO ENCALADA, COCHRANE



COVADONGA



CASMA, CHIPANA

SUBMARINES

2 Ex-U.S. "Balao" Class

Displacement: Dimensions: Guns:

1,526 tons standard, 1.816 tons surface (2,425 tons submerged) 311½×27×17 feet 1.—5 inch, 25 cal., d.p. 2.—40 mm, AA. 10.—21 inch (6 bow, 4 stern) G.M. 2-stroke diesels, B.H.P.: 6,500=20 kts (surface), H.P.: 4,610=10 kts. (submerged) 300 tons 12,000 miles at 10 kts. 80

Tubes:

Machinery:

Oil fuel: Radius: Complement:

General

General
Thomson was transferred at San Francisco, Calif., on
23 Jan. 1961 under the Military Aid Program. Simpson
was transferred at the end of 1961 under MAP.
Disposals
The old submarines Almirante Simpson and Capitan
O'Brien were removed from the list in 1958, and sister
ship Capitan Thomson was sold in 1959.

SIMPSON (ex-U.S.S. Spot, SS 413)

THOMSON (ex-U.S.S. Springer, SS 414)

Pennant No. SS 21

SS 22

Builders: Mare Island Navy Yard Mare Island Navy Yard

Launched: 20 May 1944

Completed: 3 Aug. 1944 18 Oct. 1944

3 Aug. 1944



THOMSON

1962. Chilean Navy, Official



PRAT (see next page)

1961, Chilean Navy, Official

2 "Prat" Class

(Ex-U.S. "Brooklyn" Class)

Displacement:

Prat: 10,000 tons standard (13,500 tons full load)
O'Higgins: 9,700 tons standard (13,000 tons full load)
Length: 608\frac{1}{2} (o.a.) feet Beam:
69 feet. Draught: 24 feet (max).
15—6 inch, 47 cal.; 8—5 inch,
25 cal.; 28—40 mm. AA.; 24—
20 mm. AA.
2 helicopters (see Hangar notes)
4"-1\frac{1}{2}" belt, 3"+2" decks,
5"-3" turrets, 8" C.T.
Westinghouse geared turbines, 4 shafts, S.H.P.: 100,000=32.5
kts. Dimensions: Guns:

Aircraft: Armour:

Machinery:

sharts, kts. 8 Babcock & Wilcox Express type 2,100 tons 14,500 miles at 15 kts. 888 to 975 (peace) Boilers:

Oil fuel: Radius: Complement:

General
Former "light" cruisers of the U.S. "Brooklyn" Class.
Purchased from the Umited States in 1951 at a price
representing 10 per cent of their original cost
(\$37,000,000) plus the expense of reconditioning them.

Hangar

The hangar in the hull right aft could accommodate 6 aircraft if necessary together with engine spares and duplicate parts, though 4 aircraft was the normal capacity. The existence of this hangar resulted in a very wide and nearly at counter and high freeboard aft and also gave the after guns higher command. Above the hangar two cataputs were mounted as far outboard as possible, and a revolving crane was placed at the stern extremity overhanging the aircraft hatch.

Drawing
Port elevation and plan, Scale: 128=1 Inch.

CRUISERS (Cruceros)

Pennant No.: CL 02 O'HIGGINS (ex-U.S.S. Brooklyn, CL 40)
PRAT CL 03

(ex-U.S.S. Nashville, CL 43)

Builders: New York Navy Yard New York S.B. Co. Laid down: 12 Mar 1935 24 Jan. 1935

Launched: Completed: 30 Nov. 1936 18 July 1938 2 Oct. 1937 25 Nov. 1938

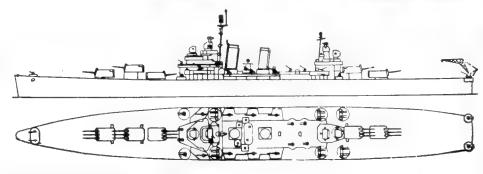


O'HIGGINS

1962, Chilean Navy, Official

Completed

31 Dec. 1960 26 Mar. 1960



DESTROYERS

DD 18 DD 19

(Destructores)

Builders Vickers-Armstrongs Ltd., Barrow Vickers-Armstrongs Ltd., Barrow

2 "Almirante" Class

Dimensions: Guided weapons: Tubes: A/S weapo weapons:

Displacement:

2.730 tons standard (3,300 tons full load)
402 (o.a.)×43×13½ feet
4—4 inch AA.; 6—40 mm. AA.
"Seacat" (see Missile notes)
5—21 inch in a quintuple bank
2 squid three-barrelled mortars
Vickers-built Parsons geared turbines of Pametrada design. 2
shafts. S.H.P.: 54,000=34·5 kts.
2, of Babcock & Wilcox type
6,000 miles at 16 kts.
266 officers and ratings

Boilers: Range: Complement:

General

Announced in Jan. 1954, that two new destroyers were to be purchased from Great Britain. Order received from the Chilean Government in May 1955. The layout, and general arrangements are strictly conventional, with two funnels. Bunks are fitted for the WILLIAMS

RIVEROS

Operational
The Operations Room and other similar spaces are airconditioned. There are twin rudders for exceptional manoeuvrability. The ventilation and heating systems have been designed to suit the Chilean coastline, extending from the tropics to Cape Horn. The latest type ships to work in conjunction with new fire control of warship radar is fitted, specially developed for these systems developed by Vickers-Armstrongs.

Appearance

Now that Williams has a lattice instead of a pole mainmast both ships are practically identical.

Construction
Riveros was completed by Dec. 1960, but she was not handed over to Chile until 16 Feb. 1962.

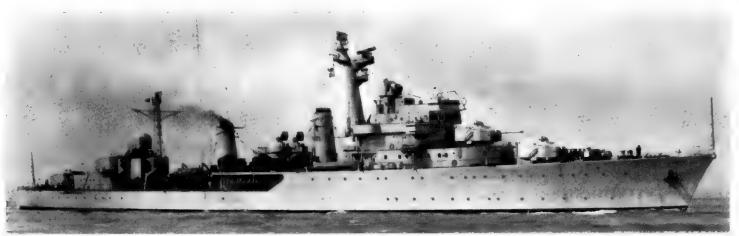
Laid down

missiles
British "Seacat" radar controlled short range surfaceto-air weapon installations were fitted at the Chilean
Navy Yard at Talcahuano in 1964.

Launched 12 Dec. 1958 5 May 1958

Gunnery
The main armament is disposed in four single mountings, two superimposed forward and two aft. The 4-inch guns are entirely automatic with a range of 12,500 yards (or over 7 miles) and an elevation of 75 degrees.

The electrical system is on alternating current, Galleys are all electric. There is widespread use of fluorescent lighting. Degausing cables are fitted.



Builders: Launched: Completed:
Bath Iron Works 7 Aug. 1943 19 Oct. 1943
Corpn., Bath
Todd Pacific 6 June 1944 2 Sep. 1944

Destroyers contd.

BLANCO ENCALADA (ex-U.S.S. Wadjeigh, DD 689)

COCHRANE (ex-U.S.S. Rooks, DD 804)

2 Ex-U.S. "Fletcher" Class

2.100 tons standard (2,750 tons full load) $376\frac{1}{2}$ (o.a.)×39 $\frac{1}{2}$ ×18 (max.) Displacement:

Dimensions:

3/6† 10-10, 10 feet 4—5 inch, 38 cal. d.p. 6—3 inch, 50 cal. AA. 5—21 inch quintupled 2 Hedgehogs, 1 D.C. rack, 6 K-Tubes: A/S weapons:

2 Heageneys, , Leading guns
2 General Electric geared turbines, 2 shafts. S.H.P.: 60,000 = 35 kts.
4 Babcock & Wilcox
250 officers and ratings Machinery:

Complement:

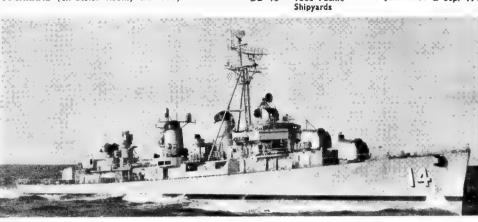
General Former United States destroyers of the "Fletcher" class. Transferred to Chile under the Military Aid Programme in 1963.

Photographs A port bow surface view of Blanco Encalda with initial B on bows appears in the 1963-64 and 1964-65 editions.

Transfers Transfers
Three more destroyers are to be transferred from the United States Navy to the Chilean Navy under a new transfer law signed by the President of the United States in 1966, whereby the United States is lending or donating warships to friendly nations. The ships will be refitted and modernised and adapted to Chilean requirements before transfer to the new flag.

Of the six destroyers of the "Serrano" class, all in 1927-29, Hyatt, Orelia, Riquelma and Serrano were stricken from the Navy List in Jam. 1963, and Aldea built by John 1. Thornycroft & Co. Ltd., Southampton, and Videla in 1958.

I "Baquedano" Class



Pennant No. DD 14

DD 15

BLANCO ENCALADA

1966, A. Ross



1965. Chilean Navy, Official

(Fragata) FRIGATE

(Ex-Canadian "River" Class)

Displacement: 1,455 tons standard (2,125 tons

1,455 tons standard (2,125 tons full load)
283 (pp.), 295\(\frac{1}{2}\) (w.l.), 301\(\frac{1}{2}\) (o.a.)\(\times 36\)\(\frac{1}{2}\)\(\frac{1}{2}\) 13\(\frac{1}{2}\) feet
2—4 inch AA., 10—20 mm. AA.
6 D.C.T.
2 sets triple expansion. 2 shafts.
1.H.P.: 5.500=20 kts.
2, of 3-drum type
646 tons
8.500 miles as \$3.500 Dimensions:

Guns: A/S weapons: Machinery:

Boilers: Oil fuel:

9,500 miles at 12 kts. Radius: Complement: General

Purchased from the Royal Canadian Navy in May 1946. Formerly had initial letter of name on bows. Disposals

Baquedano (ex-Esmeralda, ex-H.M.C.S. Glace Bay, ex-Lauzon) and Iquique (ex-H.M.C.S. Joliette) were officially withdrawn from service in 1965.

Name No. **Builders** Launched Combleted 8 July 1944 26 Sep. 1944 COVADONGA (ex-Seacliff, ex-Megantio) PF 32 Davie Shipbuilding, Lauzon



COVADONGA

1965, Chilean Navy, Official

Completed

Launched

2 "Casma" Class (Ex-Canadian "Flower" Class)

1,060 tons standard (1,340 tons full load)
193 (\$p.), 197 (w.l.), 205 (o.a.)×33×13½ feet (max.)
1—4 inch; 6-20 mm. AA
4 D.C.T.
Triple expansion.
1.H.P.: 2,750=16 kts. (max.)
2, of 3-drum type
350 tons
7.000 miles at 10 kts. Displacement: Dimensions:

A/S weapons: Machinery: Boilers: Oil fuel:

Radius: 7,000 miles at 10 kts. Complement:

Guns:

Purchased from Canada in 1946. Formerly distinguished by initial letters of their names: C-Casmas CH-Chipana; on bows, but now have pennant numbers PG 37 and PG 38 respectively.

Disposals
Sister ship Papudo (ex-H.M.C.S. Thorlock) PG 39
was officially withdrawn from service in 1965.

CORVETTES

Builders
Morton Ltd., Quebec City, P.Q. Name CASMA (ex-Stellarton) CHIPANA (ex-Strathroy) Midland Shipyards Ltd., Midland, Ont.



CASMA

1966, A. Ross

PATROL VESSELS

2 "Lautaro" Class

Launched 27 Nov. 1942 5 June 1944 Pennant No. PP 62 PP 60 LAUTARO (ex-U.S.S. ATA 122) LIENTUR (ex-U.S.S. ATA 177)

534 tons standard (835 tons full load)
134½ (w.l.), 143 (o.a.)×33×13½ (max.) feet
1.—3 inch AA., 2.—20 mm, AA.
G.M. diesel-electric. S.H.P.: 1,500=12·5 kts. Displacement: Dimensions: 1—3 G.M. 187 Guns: Machinery-Oil fuel: Complement: tons

General

Former United States Navy auxiliary ocean Tugs of the ATA type ("Marioopa" class), originally ocean rescue tugs (ATRs), transferred to the Chilean Navy and reclassified as patrol vesels, Launch dates above. Built by Levingstone Shipbuilding Co., Orange, Texas, U.S.A.

Loss
Sister ship Leucoton (ex-U.S.S. ATA 200) PP 61 ran aground on a sand bank on 15 Aug. 1965 and was lost as a result of a heavy coastal storm during salvage operations.



SURVEY SHIP

I Ex-U.S. Fleet Ocean Tug Type

YELCHO (ex-U.S.S. Tekesta, ATF 93) Pennant No. AGS 64

1,235 tons standard (1,675 tons full load) 195 (w.l.), 205 (o.a.) \times 38½ \times 15½ (max.) feet '1—3 inch, 4—40 mm. AA., 2—20 mm. AA. 4 diesels with electric drive. B.H.P.: 3,000=16·5 kts. imensions: Guns: Machinery: Complement:

General
Former United States fleet ocean tug of the ATF type ("Apache" class) fitted
with powerful pumps and other salvage equipment, Yelcho was built by Commercial
Iron Works, Portland, Oregon, laid down on 7 Sep. 1942, launched on 20 Mar.
1943, completed on 16 Aug. 1943, and loaned to Chile by the U.S.A. on 15 May
1960, having since been employed as Antarctic research ship and surveying vessel,

Sister ship Janequeo (ex-U.S.S. Potawatomi, ATF 109) AGS 65 sank with all hands on 15 Aug. 1965 during the salvage operations of Leucoton, see above.



YELCHO

1963, Chilean Navy, Official

HELICOPTER SUPPORT SHIP

Barcaza Porta-Helicoptero

AGUILA ARV 135 (ex-U.S.S. Aventinus, ARVE 3, ex-LST 1092)

1,625 tons light (4,100 tons full load) 316 (w.l.), 328 (o.a.)×50×11½ feet 8—40 mm. AA. Displacement: Dimensions: Guns: G.M. diesels. 2 shafts. B.H.P.: 1,800=11.6 kts. Machinery:

Former United States aircraft repair ship (engine) Built by American Bridge Co., Ambridge, Pa. Laid down on 8 Jan. 1945, launched on 24 Mar. 1945, and completed on 19 May 1945. Transferred to the Chilean Navy by U.S.A. in 1963 under the Military Aid Programme. Multi-purpose helicopter support ship, destroyer tender and submarine repair ship.



AGUILA

1965, Chilean Navy, Official

MOTOR TORPEDO BOATS

4 New Construction

FRESIA **GUACOLDA** OUIDORA

Displacement: Dimensions: 160 tons 140×23×5 feet 2—40 mm. AA. 4—21 inch Guns: Tubes

Diesels. 4 shafts B.H.P.: 12,000=42 kts Machinery:

General

Squadron of the German "Jaguar" type built in Spain at Cadiz. Fresla and Guacolda were delivered on 9 Dec, 1965 and 30 July 1965, respectively. Quidora and Tegualda were scheduled to be delivered in 1966, Permant Nos. PTF 81, 80, 82 and 83 respectively.

LANDING SHIPS (Barcazas)

2 "Aspirante" Class

ASPIRANTE GOICOLEA (ex-U.S.S. LSM 400) ASPIRANTE MOREL (ex-U.S.S. Aloto, LSM 444) LSM 92

743 tons standard (1,095 tons full load) $196\frac{1}{2}$ (w.l.), $203\frac{1}{2}$ (o.a.) $\times 34\frac{1}{2} \times 7\frac{1}{2}$ feet Diesel, 2 shafts. B.H.P.: 2,800=12 kts. Displacement: Dimensions; Machinery; Oil fuel: 60 tons Radius: 2.500 miles Complement:

Former United States medium landing ships launched in 1945. Aspirante Morel (ex-Aloto) was leased to Chile on 2 Sep. 1960 at Pearl Harbour to replace the older LSM of the name.

Disposals
Sister ships, Aspirante Morel (ex-U.S.S. LSM 417) was withdrawn from service in 1958, Guardiamarine Contreras (ex-U.S.S. LSM 113) in 1959, and Aspirante Izaza (ex-U.S.S. LSM 295) in 1965.



ASPIRANTE MOREL

1965, Chilean Navy, Official

TEGUALDA

OROMPELLO LSM 94

290 tons light (750 tons full load)
138 (w.l.), 145 (o.a.)×34×12½ feet
Diesel. 2 shafts. B.H.P.: 900=10.3 kts. Displacement: Displacemen Dimensions: Machinery: Oil fuel: 77 tons Radius 2.900 miles Complement:

I "Orompello" Type

General
Built for the Chilean Government by Dade Drydock Corporation, Miami, Florida.
Transferred on 15 Sep. 1964

LANDING CRAFT (Barcazas)

3 "Grumete" Class

GRUMETE BOLADOS LCU 95 GRUMETE DIAZ LCU 96

GRUMETE TELLEZ LCU 93

Displacement: 143 to 160 tons light (309 to 329 tons full load) 105 ((w.l.), 119 (o.a.) \times 32 $\frac{2}{3}\times$ 5 (max.) feet Diesel. 3 shafts, B.H.P.: 675=10 kts. Dimensions: Machinery: Oil fuel: 11 tons Radius: 700 miles at 7 kts.

Complement:

Former United States tank landing craft of the LCT (6) type. Grumete Bolados, Grumete Diaz and Grumete Tellez are ex-LCU 1273, ex-LCU 1396 and ex-LCU 1458. Launched in 1944. Transferred in 1960.

Disposals

Of the six landing craft of the "Cabo Bustos" class, Cabo Rustos was converted into a harbour ammunition barge and Eduardo Llanos and Soldado Canaves were officially withdrawn from service in 1965; and sister ships Grumete Bolados, Grumete Dloz and Grumete Tellez were withdrawn from service in 1959.

There is also the auxiliary floating dry-dock:-

MUTILLA ARD 132 (ex-U.S.S. ARD 32)

5,200 tons 492×84×53 to 334 feet Displacement:

General Former United States auxiliary repair dry-dock (ARD). Leased to Chile by the U.S.A. on 15 May 1960. Delivered to the Chilean Navy in 1960. Loaned for five

The submarine depot ship Arancano was stricken from the list in 1963.

The coastguard vessel Piloto Sibbald was stricken from the list in 1963, and the d Yelcho, employed on surveying service, in 1959.

ATTACK TRANSPORT (Transporte de Ataque)

PRESIDENTE PINTO (ex-Zenobia, AKA 52.) Pennant No. AKA 41

Displacement: Dimensions:

Guns: Machinery:

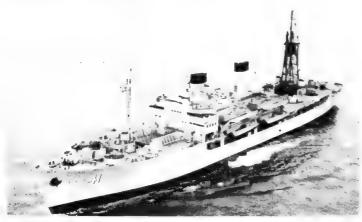
4.100 tons standard (6,744 tons full load)
426 (o.a.)×58×16 (max.) feet
1—4·7 inch, 2—3 inch, 8—40 mm.
Turbo-electric. 2 shafts. S.H.P.: 6,000=17 kts,

Boilers: Complement:

Wickes 225

General

Former United States attack cargo ship of the AKA type. Built by Walsh-Kaiser. Launched on 6 July 1945. Purchased from the U.S. Navy in Nov. 1946. Served as a training ship for midshipmen. Symbol changed from APA to AKA in 1965. Sister ship Presidente Errozuriz (ex-Xenia, AKA 51), APB 40 was removed from the Navy List



PRESIDENTE PINTO

1965, Chilean Navy, Official

TRANSPORTS

ANGAMOS Pennant No. AP 48

Displacement; Dimensions:

Machinery:

3,800 tons standard 314 (pp.), 340 (o.a.)×46×19¾ feet Triple expansion, I.H.P.; 2,200=12 is 575 tons 72+74 passengers or troops

Complement:

Built at Aalborg. Laid down on 5 Apr. 1940. Launched in 1941. Delivered in Feb. 1946. Named after the naval victory which, on 8 October 1879, virtually decided the issue of the war against Peru and Bolivia.

Disposals

The old transport Pilcomayo was removed from the effective list in 1959. The transport Micalvi (ex-Boston Lines, ex-Bragi) was stricken from the list in 1963.



ANGAMOS

1965, Chilean Navy, Official

ANTARCTIC PATROL

PILOTO PARDO Pennant No. AP 45

Displacement: Dimensions: Aircraft: Machinery:

1,250 tons light, 2,000 tons standard (3,000 tons full) $269{\times}39{\times}15$ feet

1 helicopter

2 diesel-electric, H.P.: 2,000=14 kts.

Complement: 44 (plus 24 passengers)

General

Built by Haarlemsche Scheepsbouw Mij, Haarlem, Netherlands, Antarctic patrol ip, transport and research vessel with reinforced hull to navigate in ice. For ecial service in Southern Ocean. Officially listed as transport. Delivered in 1959.



PILOTO PARDO

1965, Chilean Navy, Official

OILERS

ALMIRANTE JORGE MONTT Pennant No. AO 52

9,000 tons standard (17,500 tons full load)
11,800 tons gross, 17,750 tons deadweight
548×673×30 feet
Rateau Bretagne geared turbines. 1 shaft.
S.H.P.: 6,300=14 kts.
2 Babcock & Wilcox Displacement: Measurement: Dimensions:

Machinery:

Boilers: Radius: 16,500 miles at 14 kts. General

Naval squadron supply tanker. Built by Ateliers et Chantiers de la Seine Maritime, Le Trait, France, Laid down in 1954. Launched on 14 Jan. 1956. Completed in Mar. 1956 Disposals

The old oilers Malpo, AO 50, and Rancagua, AO 51, were withdrawn from service in 1965, it is officially stated.



ALMIRANTE JORGE MONTT

1962, Chilean Navy, Official

TRAINING SHIP (Buque Escuela)

ESMERALDA (ex-Don Juan de Austria) Pennant No. BE 43

3,040 tons standard (3,673 tons full load)
308\(\frac{1}{2}\) (\(\overline{a}\), 260 (\(\overline{p}\), \times 43\times 23 (\(\overline{max}\), \(\overline{p}\) feet
2—57 mm.
Total 26,910 sq. feet
1 Flat Auxiliary Diesel, 1 shaft. B.H.P.; 1,400=11 kts. Displacement: Dimensions: Guns:

Sail area: Machinery:

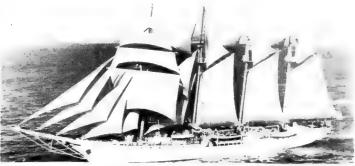
Range: Complement: 8.000 miles

271 plus 80 cadets

General
Four-masted schooner completed in 1952. Built in Spain by the Echevarrieta Yard,
Cadiz, and originally intended for the Spanish Navy. Transferred to Chile on 12 May,
1953. Near sister ship of Juan Sebastian de Elcano in the Spanish Navy. Similar to
the Brazilian training ship Almirante Sadanha Replaced transport Presidente Pinto as training ship.

Disposals

The smaller and older training ship (school tender) Vidal Gormaz was withdrawn from service in 1958. The very old training vessel Orompello (former minelayer) was scrapped in 1957.



ESMERALDA

1965, Chilean Navy, Official

GALVARINO ATA 74

SEAGOING TUGS (Remolcadores de Alta Mar) 4 "Cabrales" Class

CABRALES ATA 71 COLOCOLO ATA 73

Displacement: Dimensions: Machinery:

790 tons $126\frac{1}{2}\times27\times12 \pmod{\text{feet}}$ Triple expansion, I.H.P.: 1,050=11 kts. 130 tons coal (except Cabrales, 135 tons oil)

General

All built by Bow, McLachlan & Co., Paisley. Cabrales was launched on 24 Oct.
1929, and was converted into an oil burner in 1959. These ships are classed as coastguard vessels. A photograph of Galvarino appears in the 1953-54 to 1957-58 edition.

Disposals

Sister ship Janequeo was withdrawn from service in 1958, and disposed of, and Sobenes was officially withdrawn from service in 1965.

HARBOUR TUGS

HUEMUL (ex-Vilumilia) Pennant No. YT 124

Displacement:

Dimensions: Machinery.

320 tons 100 (w.f.),×22×13 feet Triple expansion. I.H.P.: 1,050=11 kts. Boilers: Coal capacity:

35 tons

Built at Valdivia and launched in 1937. Another of the same type, Contramaestre Brito (ex-Pelantaro), was lost,

ANCUD (YT 104) CAUPOLICAN (YT 127) CORTEZ (YT 128)

MOCTEZUNA (YT 108) MONREAL (YT 105)

REYES (YT 120) UGARTE (YT 107)

Fortuna (YT 123) and Galvez (YT 102) were officially withdrawn from service 1965. Disposals

Loss Yagan (YT 126) capsized and was lost in Punta Arenas in 1964 while assisting merchant ship on a sandbank during a storm.

PEOPLE'S REPUBLIC OF CHINA

Ships

- 30 **Submarines**
- Destroyers
- Destroyer Escorts
 Frigate Escorts

Displacement:

Guided weapons: Torpedo tubes:

Dimensions:

Radius: Complement:

Displacement:

Dimensions:

Mines: Machinery:

Radius: Complement:

Guns: Tubes:

- 30 Submarine Chasers
- Motor Torpedo Boats/Fast Patrol Boats.

2 "G" Class. Ballistic Missile Type

Ballistic missile submarines of the Soviet "G" class. One built at Dairen in 1964, and another being completed there.

21 Soviet "W" Class

submerged 320×28×22 feet

2.350 tons surface, 2,800 tons

310×28×22 feet
3 vertical tubes for missiles
6—12 inch (bow)
3 diesels. 3 shafts. Total H.P.:
6,000=17·6 kts. surface.
Electric motors=17 kts. submerged
22,700 miles surface cruising
86 (12 officers, 74 men)

1,050 tons standard, 1,300 tons (surface), 1,600 tons (surbaced) 245 (o.o.) × 24 × 14 feet 2—25 mm.
6—21 inch (4 forward, 2 aft) 40 mines or 20 torpedoes Diesel-electric. 2 shafts. Diesels: B.H.P. 4,000=17 kts. (surface) Electric motors: H.P.: 2,500=15 kts. (submerged) 13.000 to 16,500 miles 60

- Motor Gunboats/River Gunboats
- 60 Amphibious Types/Landing Ships
- 50 Auxiliaries
- 380 Miscellaneous Service Craft

Block numbering system:— Submarines: 100 series; Major Surface Ships: 200 series; Amphibious Ships: 300 series.

1966: 126.000 officers and men, including 16,000 naval air force and 28,000 marines.

Mercantile Marine

Lloyd's Register of Shipping: 213 vessels of 551,143 tons gross

SUBMARINES



"G" class

4 Ex-Soviet "S" Class

5 400 \$ 401 S 402 S 403 780 tons standard, 840 tons (surface) 1,050 tons (sub-Displacement:

(surface) 1,050 merged) 256×21×13 feet Dimensions:

1-3.9 inch; 1-45 mm, AA. 6-21 inch Diesels. B.H.P.: 4,200=19 kts. (surface) Guns: Tubes Machinery:

Electric motors. H.P.: 2,200= 8.5 kts. (submerged) 105 tons Oil fuel: 9,800 miles at 9 kts. Radius: Complement:

General

All launched in 1937-40. Particulars of individual pats vary slightly. Transferred from the U.S.S.R. in 1954-55. Disposals

The four ex-Soviet "Shshuka" class medium type sub-marines (see particulars in the 1962-63 and earlier editions) were deleted from the list in 1963.

1966, col. Brever

3 Ex-Soviet "M-V" Class

M 201 M 202 M 203 (surface), 420 tons Displacement: 350 tons Solutions (surface), 420 tons (submerged)
167\frac{1}{\times}\text{16}\times 12 feet
1-45 mm, AA., 1 M.G.
2-21 inch
Diesels, B.H.P.: 1,000=13 kts. Dimensions: Gune Tubes: Machinery: (surface)
Electric motors.
kts. (submerged) H.P.: 800=10 Oil fuel: 4,000 miles at 8.5 kts. Radius: Complement:

General General
Designed for coastal operations, now used for training and instruction. Four were transferred from the U.S.S.R. in 1954-55, but M 200 was deleted from the list in 1963. Disposals

The two smaller submarines built for coastal opera-tions, one of the ex-Soviet "M IV" class, and one of the ex-Soviet "M I" class, latterly used only for training and instructions, were deleted from the list in 1963.

4 Ex-Soviet "Gordy" Class

Medium size, streamlined, long range boats similar to those built in the Soviet Union. Equipped with snort. Fitted for minelaying. Assembled from Soviet com-ponents in Chinese yards between 1956 and 1964.

MAHEMA CHANG CHUN FU CHUN

Displacement: 1,657 tons standard (2,150 tons full load) 357% (pp. 13 feet 1eet , 3/7 (o.d.)×33½×
4—5:1 inch, 8—37 mm. AA, 6—21 inch (tripled) 8 D.C.T. 100 Dimensions:

Guns: Tubes: A/S weapons: Mines:

Tosi geared turbines. 2 shafts. S.H.P.: 50,000=36 kts. 3-drum type Machinery:

Oil fuel: 500 tons 250 Complement:

Of Odero-Terni-Orlando design. All launched in 1936-41. Fitted for minelaying. Two "Skoryi" class destroyers are also reported to have been acquired from

DESTROYERS



CHANG CHUN

Cruisers

The old cruiser Kaganovitch was reported to have been lent or leased by the U.S.S.R. to the People's Republic of China. For particulars see U.S.S.R. section.

The old light cruiser Pel Ching (ex-Huang Ho, ex-Victory, ex-Chungking, ex-H.M.S. Aurora is now a hulk. For particulars see 1959-60 and earlier editions.

Hajime Fukaya

FRIGATES

4 "Riga" Class Destroyer Escort Type

CH'ENG TU

1,200 tons standard (1,600 tons full load) 295 (o.g.) \times 31 $\frac{1}{2}$ \times 10 feet Displacement: Dimensions:

Guns:

Tubes: A/S weapons: Machinery:

CHANG PAI

Boilers: Oil fuel: Complement: 300 tons 200

3-3-9 d.p. (single mounts); 3-37 mm. AA. 3-21 inch (3 torpedoes) 4 depth charge projectors Geared turbines. 2 shafts, S.H.P.; 24.000=28 kts.

Built in China. First of the class, launched on 28 Apr. 1956 at Hutang Shipyard, Shanghai, had light tripod mast, but was later converted with heavier mast and larger bridge as in the other three. Second vessel built by the same yard was launched on 26 Seo. 1956. Built by the same yard was launched on 26 Seo. 1956. Built bitted with mine rails (mine capacity 50). Third vessel was built at Shanghai. Only four "Riga" class ships were built, the last in 1957 by Hutung Shipyard.

2 Ex-Japanese Escort Destroyer Types

HUI AN (ex-Shisaka)

940 tons standard (1,020 tons full load)
255 (w.l.). 258½ (o.a.)×30× Displacement: Dimensions:

255 (w.l.). 2364 (0.a.)/30/ 10 feet 2—47 inch, 6 M.G. 2 diesels. 2 shafts. B.H.P.: 4,200=19.5 kts. Machinery:

Complement:

Ex-Japanese "Ukuru" class escort destroyer. Launched in 1943. Completed in 1945. Rearmed in 1955,

CHANG PAI (ex-Japanese Oki, ex-Chinese Ku An)

870 tons standard (1,020 tons full load) Displacement: Dimensions:

full load)
237½ (pp.), 250 (w.l.), 255
(o.a.)×30×10 feet
2—3·9 inch; 2—45 mm, AA.
2 diesels. 2 shafts. B.H.P.:
4,200=19·7 kts. Guns: Machinery:

Complement:

Ex-Japanese Type A or "'Etorofu" class. Built by Uraga Dock Co. Ltd. Laid down on 27 Feb. 1942. Launched on 20 Oct. 1942. Completed on 31 Mar.

Hajime Fukaya

1943. Rearmed in 1955. One raked funnel, two pole masts with tripod bases. Sister ship of Lin Taiwan (National Republic of China) Navy.

55

Ex-Japanese Sloop (Gunboat) Type

NAN CHANG (ex-Chinese Chang Chi, ex-Japanese Uji)

Displacement:

950 tons standard (1,206 tons full load)
249\(\frac{1}{2}\) (pp.), 257\(\frac{1}{2}\) (w.l.), 264
(o.a.) \(\times 31 \times 8\)\(\frac{1}{2}\) feet
2—3 '9 inch; 2—3 inch, 4—20
mm. AA.
2 turbines. S.H.P.: 4,600=20:15 Dimensions: Guns:

Machinery: kts.

Radius: Complement: General 3,460 miles at 14 kts.

Boilers:

General
Former Japanese sloop or gunboat. Built at Sakurajima Works, Osaka. Launched on 25 Sep. 1940. Completed in 1941. Rearmed in 1955.

Frigates—Continued



NAN CHANG

K. Long

5 Ex-Japanese Corvette Types

SHEN YANG (ex-Yuang An, ex-Mukden, ex-No. 81)

745 tons standard (810 tons full Displacement: 745 tons standard (w.l.), 221½ (o.d.) 216½ (w.l.), 221½ (o.a.) × 27½ × 9½ feet 2—3·9 inch, 4—37 mm. AA, 2 diesels. B.H.P.: 1,900=16·5 Dimensions: Guns: Machinery: kts. 6,500 miles at 14 kts. 136 Radius; Complement:

Ex-Japanese C or No. 1 Type. Built in 1944-45 Remed in 1955. Sister ship Chi An is now a hulk.

CHANG SHA (ex-Chinese Chieh 12, ex-No. 118)
CHI NAN (ex-Wel Hal, ex-Chieh 6, ex-No. 194)
HSI AN (ex-Chinese Chieh 14, ex-Japanese No. 198)
WU CHANG (ex-Chinese Chieh 5, ex-Japanese No. 148)

Chang Sha Hsi An Bullders:

Kawasaki Sensha Works 8 June 1944 18 Oct. 1944 27 Dec. 1944 Mitsubishi. Zosen Co., Nagasaki 17 Jan. 1945 26 Feb. 1945 31 Mar. 1945 Launched: Completed:

Displacement: 740 tons standard (900 tons full 740 tons standard (900 tons full load)
213½ (pp.), 223 (w.l.), 228 (o.a.) × 28½ × 10 feet
2—3·9 inch or 4·7 inch, 3—3 inch or 3 or 6—37 mm. AA.; 4—25 mm. or 3—20 mm. AA.
1 steam turbine. S.H.P.: 2,500 = 17·5 kts.
4,500 miles at 14 kts. Dimensions: Guns:

Machinery:

Radius: Complement:

CHI NAN Haiime Fukava

CHANG SHA

Hajime Fukaya

Ex-Japanese Type D or Kaibokan Class No. 2 Type.

Thin trunked funnel amidships. Pole masts with tripod bases.

I Ex-Canadian Corvette Type

KUANG CHOU (ex-Chinese Yuan Pel, ex-H.M.C.S. Bowmanville, ex-Nunney Castle)

1,100 tons standard (1.580 tons Displacement:

full load)

Dimensions: 252 (o.a.) \times 36 $\frac{1}{2}$ \times 15 $\frac{1}{2}$ (max.) Guns:

252 (o.d.) × 36f × 15f (max.) feet 2—5·1 inch, 1—45 mm. AA., 5—37 mm. AA. Triple expansion. I.H.P.: 2,800 = 16·5 kts. 2, of three-drum type Machinery: Boilers:

Oil fuel: 480 tons
Radius: 8,400 miles at 10 kts.
Complement: 100
General
Built by Wm. Pickersgill & Sons, Ltd., Sunderland.
Laid down on 12 Aug. 1943. Launched on 26 Jan. 1944.
Completed on 8 Oct. 1944.

2 Ex-British Corvette Type

KAI FENG (ex-S.S. Cloverlock, ex-H.M.S. Clover) LIN 1 (ex-S.S. Zlang Teh, ex-H.M.S. Heliotrope, ex-U.S.S. Surprise)

1,020 tons standard (1,280 tons Displacement: full load)

Dimensions: Guns:

Machinery:

Boilers:

190 (pp.), 205 (o.a.) × 33 × 14½ feet 2—3-9 inch; 1—45 mm. AA.; 4—37 mm. AA. (Kai Feng) 2—3-9 inch; 2—37 mm. AA. (Lin 1) Triple expansion. 1.H:P.: 2,750 =16 kts. 2 S.E.

350 tons coal 7,000 miles at 10 kts. 78

Fuel: 350 tons coal
Radius: 7,000 miles at 10 kts.
Complement: 78
General
Both built in 1940-41. Converted from merchant vessels by Chinese Republicans and re-armed. Existence of sister ship, former corvette, converted, ex-Coppercilff (ex-Wan Lee, ex-Ta Lun) is doubtful.

PATROL VESSELS

2 Soviet "S.O.I." Class Submarine Chasers

Displacement: Dimensions: Guns: A/S weapons: Machinery:

215 tons
138×20×7 feet
4—25 mm. (2 twin)
4 five-barrelled depth charge mortars
Diesels. Speed 28 kts.

Two of this class reported to have been transferred from the U.S.S.R. in 1960.

24 Soviet "Kronstadt" Class Submarine Chasers

PC 611

PC 612

PC 615

PC 618

PC 622

Displacement: Dimensions:

300 tons 167½ × 19½ × 9 feet 1—3·9 inch; 2—37 mm, AA.; 3—20 mm, AA. Diesels. 2 shafts. Speed 27 kts.

Six built in 1950-53 were received from U.S.S.R. in 1956-57. Eighteen were built at Shanghai and Canton, with 12 completed by 1956. The last was assembled in 1957. Flush decked, large squat funnels, slightly raked, massive block bridge structure.

6 Ex-Soviet "Artillerist" Class

Displacement: Dimensions: Guns: Machinery:

240 tons $160! \times 19 \times 8 \frac{1}{7}$ feet 1-3 inch; 12-37 mm. AA.; 3 M.G.; 2 D.C.T. Diesels. 2 shafts. B.H.P.: 3.300=23 kts.

Patrol Vessels—Continued

2 Ex-British "Isles" Class

(ex-H.M.S. Hoxa)
Displacement:
Dimensions:
Guns:
Machinery:
Boilers:
Fuel: Fuel: Complement:

(ex-H.M.S. ____)
560 tons standard (770 tons full load)
150 (pp.), 164 (o.a.) × 27½ × 14 feet
1—3 inch, 2—20 mm, AA.
Triple expansion. I.H.P.: 850=12·5 kts.
1 Cylindrical
183 tons coal

Former British anti-submarine and minesweeping trawlers. Hoxo was built by bok, Welton & Gemmell, Ltd., in 1941.

(ex-H.M.S. Bassett)

Displacement: Dimensions: Guns: Machinery: Boilers: Fuel: Complement:

461 tons standard (696 tons full load) 150 (pp.), 160½ (o.a.) × 27½ × 10½ feet 1.—3 inch, 2—20 mm. AA.

Triple expansion. I.H.P.: 850=12 kts. l Cylindrical 180 tons coal 37

Former British trawler. Built by Henry Robb, Ltd., Leith. Launched on 28 Sep. 1935. Above three ships, converted into merchant vessels. were acquired by the Chinese Republic and rearmed.

GUIDED MISSILE PATROL BOATS

I Soviet "Osa" Class

Displacement: Dimensions: Guided weapons:

160 tons full load
122 (o.a.)×23×6 feet
4 large missile launchers in two pairs abreast aft
4—25 mm. (2 twin)
Speed=40 kts.

Machinery:

It was reported in Jan. 1965 that one "Osa" class guided missile patrol boat had been incorporated in the Navy.

Displacement: Dimensions: Guided weapons: Guns: Machinery:

I Soviet "Komar" Class

70 tons full load 83 $(o.a.) \times 21 \times 6$ feet 2 launchers for missiles 2—25 mm. (1 twin) Speed=40 kts.

One "Komar" class guided missile boat is reported to have joined the fleet in 1965.

FLEET MINESWEEPERS

12 Soviet "T 43" Class

Displacement: Dimensions: Guns: Machinery:

410 tons standard (530 tons full load) 200 \times 27 $\frac{1}{2}$ \times 9 feet 4—37 mm. AA. Diesels=18 kts.

Two were acquired from Russia in 1954-55. Ten more were built in Chinese ship-yards, two in 1956, and the remainder since. The construction of "T 43" class fleet minesweepers was terminated at Wuchang, but continued at Canton.

I Ex-British "Bathurst" Class

Ex-S.S. CHEUNG HING (ex-H.M.A.S, Bendigo)

Displacement: Dimensions:

815 tons standard (1,025 tons full load)
162 (pp.), 186 (o.a.) × 31 × 8½ feet
2—51 inch, 2—37 mm. AA,
Triple expansion. 2 shafts, 1.H.P.: 1,800=15 kts.
2 Admiralty 3-drum small tube type
170 tons
4,300 miles at 10 kts.
85

Guns Machinery:

Boilers:
Oil fuel:
Radius:
Complement:

Built as a fleet minesweeper. Launched in Mar. 1941 at Sydney, Australia. Disposed of as surplus after the Second World War. Converted from a merchant vessel by the Chinese Republic and rearmed.

MOTOR GUNBOATS

10 "Shanghai II" Class

Two centreline trainable torpedo tubes abaft the superstructure. Ten boats of this class built with construction continuing at Shanghai at the rate of four to six per year.

12 " Shanghai" Type

Displacement:

Dimensions: Guns: Machinery: Complement:

100 tons full load $120\times18\times5\frac{1}{2}$ feet 4-37 mm. in twin mountings fore and aft 4 diesels. B.H.P.: 4.800=28 kts. 21

A new class, the prototype of which appeared in 1959. Quickly convertible type

44 "Swatow" Type

Displacement: Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Complement:

67 tons full load 83½ × 20 × 6 feet 4—37 mm. in twin mountings. 2—12·7 mm. 8 depth charges 4 diesels. B.H.P.: 4,800=40 kts.

A new class with "P 6" type motor torpedo boat hulls but with torpedo tubes removed and fitted with twin 37 mm. guns fore and aft, but with some units having only one twin 37 mm. mounting. In 1958 "P-6" hulls were converted to "Swatow" class motor gunboats at Dairen, Canton, and Shanghai.

3 Ex-U.S. Type

Ex-PGM 12

KAN TANG (ex-PGM 15)

Displacement: Dimensions: Guns: Machinery: Complement:

280 tons standard, 348 tons (trial), 450 tons full load 170 (w.f.), 173 $\frac{1}{2}$ (o.a.) \times 23 \times 11 (max.) feet 1—3 inch, 50 cal. d.p., 2—40 mm. AA, (twin) G.M. Diesel. 2 shafts. B.H.P.: 2,800=20 kts. 65

Former U.S. submarine chasers or patrol vessels (motor gunboats).

MOTOR TORPEDO BOATS

70 "P 4" Type

This class have aluminium hulls. (The German-built Kual 102 was deleted from the list in 1963.

80 "P 6" Type

This class have wooden hulls, "P-6" class motor torpedo boats are under construction in Chinese Republican yards, All have been built since 1956.

PATROL CRAFT

2 Ex-Japanese Type

Ex-KWANG KUO (ex-Japanese No. 223) Displacement: Dimensions:

Ex-HSIEN FENG
(ex-Chinese Koo Ming, ex-Japanese)

135 tons 96 × 19 × 9 feet

S.C. Type. Built in $\{941-43.\}$ (The ex-British harbour defence motor launches were lost.)

COASTAL MINESWEEPERS

4 Ex-U.S. YMS Type

Ex-YMS 346 Ex-YMS 367

Ex-YMS 393

Ex-YMS 2017

Displacement: Dimensions: Guns: Machinery: Complement: 270 tons standard (350 tons full load) 136 \times 24 $\frac{1}{3}$ \times 6 feet 1—3 inch, 2—20 mm., 2 D.C.T. 2 G.M. Diesels. B.H.P.: 1.000=13 kts.

Built of wood in U.S.A. in 1942-43, and transferred to the Chinese Navy in 1948. Some are fitted as minesweepers, others as gunboats. Ex-YMS 339 was deleted from the list in 1963.

2 Ex-Japanese AMS Type

Ex-No. 4

No. 201 (ex-No. 14)

Displacement:

Dimensions: Guns:

215 to 222 tons $97\frac{1}{2}$ (o.a.) \times $19\frac{1}{2}$ \times $7\frac{1}{2}$ (max.) feet $1-3\cdot 1$ inch, 4-25 mm. (No. 201, 1—40 mm., 1—25 mm., 2—13 mm., 3—7·7 mm.) 1 Diesel, B.H.P.: $300=9\cdot 5$ kts. 1,700 miles at $9\cdot 5$ kts.

Machinery:

Ex-Japanese auxiliary minesweepers. Trawler type: No. 201, completed in 1943, was delivered to China at Tsingtau on 3 Oct. 1947, and taken over by the Chinese Republic. Nos. 19 and 22 were taken over by the Nationalists, see later page.

GUNBOATS

Ex-YUNG SUI

Displacement:

650 tons
225×30×6 feet (mean), 7 (max.) feet
1—3 inch AA., 1—40 mm. AA., 4 M.G.
Triple expansions. 2 shafts, I.H.P.; 4,000=12 kts.
2 Yarrow. Coal fired. Dimensions: Guns: Machinery:

Boilers: Complement:

Built by Kiangnam Dock Co., Shanghai, Launched in 1929. Salvaged and repaired after sinking in 1949. Yung Sul is ex-Chinese Nationalist name.



YUNG SUI

Official

Ex-AN TUNG (ex-lapanese Ataka, ex-Nakosa)

Displacement: Dimensions: Guns:

Machinery:

727 tons
222×32×7½ feet
2—3 nch, 5—25 mm., 6 M.G.
Triple expansion. I.H.P.: 1,700=11 to 14 kts.
2 Kampon

Former Japanese gunboat, Built at Yokohama Dock, Launched in April, 1922, Coal burning.



AN TUNG

Official

Ex-YEN AN (ex-Yung Chi, ex-Japanese Asuka, ex-Yung Chi)

Displacement: Dimensions: Guns:

Machinery: Boilers:

860 tons 205 (pp.), 215½ (o.a.)×29½×11½ feet (max.) 2—3 inch, 4 M.G. Triple expansion. 2 shafts, I.H.P.: 1,350=11 kts. 2 cylindrical 156 tons 143

Coal: Complement: Built by Kiangnan Dock Co., Shanghai, Launched in 1915. Sunk in 1945 and later



YEN AN

Official

Gunboats continued

CH'ANG CHIANG (ex-Ming Chuan)

Displacement: 464 tons
Dimensions: 176½×26×6 feet (mean), 6½ (max.) feet
Guns: Only 3 M.G. at present
Machinery: Triple expansion. 2 shafts. 1.H.P.; 2,200=12 kts.
Boilers: 2 Yarrow

Coal 280 tons Complement: 119

Built by Kiangnan Dock Co., Shanghai. Launched in 1929.

Ex-WEI NING

300 tons standard 141×22×8 feet 2—2·4 inch, 3 M.G. Reciprocating, i.H.P., 600=10 kts. Displacement: Dimensions: Guns:

Machinery:

Built at Shanghai in 1933. Reported sunk in 1949 but believed to have been salvaged.

Ex-CHU TUNG

Displacement: Dimensions:

Guns:

740 tons 200 × 30 × 8 feet 2—3 inch, 5—25 mm. AA. Triple expansion. 2 shafts. I.H.P.: 1,350=11 kts. Machinery: Boilers:

Yarrow 150 tons 117 Coal: Complement:

Built by Kawasaki Co., Kobe. Launched in 1906. Sister ship of Chu Kwan (Nationalist).



CHU TUNG

Official

CHIANG YUAN

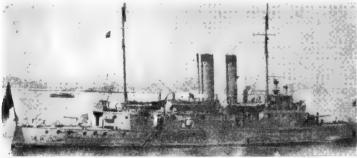
Displacement:

ensions:

550 tons 170 (ρρ.), 180 (σ.σ.) × 28 × 7 feet 1—20 mm. AA. Triple expansion. 2 shafts. I.H.P.: 4.000=12 kts. Watertube Guns: Machinery:

Coal: Complement:

Built by Kawasaki Co., Kobe. Launched in 1905. Former armament removed.



CHIANG YUAN

Official

TING HSIN

TUNG TEH

Displacement: Machinery: Fuel:

500 tons standard 1—3 inch, 4—47 mm. Speed: 11 to 15 kts, max. Coal

Both captured by the People's Republic of China Navy in 1949.

RIVER GUNBOATS

Ex-YUNG AN (ex-Futami)

Ex-YUNG PING (ex-Atami)

Displacement: Dimensions: Guns:
Machinery:
Boilers:
Oil fuel:
Complement:

170 tons 148½ × 22 × 4½ feet 1—47 mm. AA., 5—25 mm. AA., 3 M.G. 2 sets triple expansion. 2 shafts. I.H.P.: 1,200=12 kts.

tons

Built by Tama, Fujinagata. Both launched in 1929. Former Japanese river gunboats.



YUNG PING

Official

FU CHIANG (ex-Chiang Feng, ex-Chinese Kiang Shih, ex-Japanese Fushima) Ex-CHIANG HSI (ex-Chinese Nan Chang, ex-Japanese Sumida)

Displacement: Dimensions: Guns: Machinery: Boilers: Radius: Complement:

Both ships were built by Fujinagata Co., Osaka. Launched on 26 March 1939 and 30 October 1939, respectively. Completed on 15 July 1939 and 31 May 1940, respectively. Were the latest river gunboats in the Japanese Navy. Fushima bombed and bottomed at Anking on 29 Nov. 1944, was salvaged and towed to Shanghai for repairs and was moored there at the end of the war. Sumida was at Shanghai at the end of the war; her armament has been removed for land batteries.



FIL CHIANG

Official

Ex-YING HAO (ex-H.M.S. Sandbiber)

Displacement:

185 tons $160\times30\frac{1}{2}\times2$ (mean) feet $1-3\cdot7$ inch howitzer, 9 smaller 2 sets triple expansion. 2 shafts. I.H.P.: 600=11 kts. 1, of Admiralty 3-drum type Guns:
Machinery:
Boilers:
Complement:

Built by John I. Thornycroft & Co. Ltd., Southampton. Launched on 9 June 1933. Presented to Nationalist China by Great Britain in Feb. 1942, and subsequently taken over by the Republicans. Now has mainmast.

Ex-NAN CHIANG (ex-Ying Teh, ex-Lung Huan, ex-H.M.S. Falcon)

Displacement: Dimensions:

372 tons $150\times28\frac{1}{7}\times5~(\textit{mean})~\text{feet}\\ 1-3\cdot7~\text{inch howitzer,}~2--6~\text{pdr.,}~10~\text{M.G.}\\ Parsons geared turbines.}~\text{S.H.P.:}~2,250=15~\text{kts.}\\ 2,~\text{of Admiralty 3-drum}~\text{type}\\ 84~\text{tons oil}\\ 55$ Guns: Machinery: Boilers:

Fuel: Complement:

Built by Yarrow & Co., Ltd., Scotstoun, Glasgow. Launched in 1931. Presented to Nationalist China by the British Government in Feb. 1942, and subsequently taken over by the Republicans.

Ex-YING SHAN (ex-H.M.S. Gannet)

Displacement:

310 tons 177 (w.f.), $184\frac{7}{3}$ (o.a.) \times 29 \times 3 $\frac{1}{4}$ feet 2.—3 inch AA., 8 M.G. Geared turbines. Designed S.H.P.: 2,250=16 kts. Dimensions: Guns: Machinery:

Yarrow 60 tons oil 55 **Boilers:** Fuel: Complement:

Designed by Yarrow. Built by Yarrow & Co. Ltd., Scotstoun, Glasgow. Launched in 1927. Presented to Nationalist China by Great Britain in Feb. 1942, and subsequently taken over by the Republicans.

Ex-MEI YUAN (ex-U.S.S. Tutulla) Ex-TAI YUAN (ex-Tatara, ex-U.S.S. Wake ex-Guam)

 $(o.a.) \times 27 \times 5\frac{1}{4}$ (mean—fresh

370 tons standard 150 (w.l.) \times 159 $\frac{1}{2}$ (o.a.) \times 27 \times 5 $\frac{1}{2}$ water), 6 (max.) feet 2—3 inch. 23 cal., 10 M.G. Triple expansion. I.H.P.: 1,950=12 kts. 75 tons 70 Guns:

Machinery: Oil fuel: Complement:

Displacement: Dimensions:

Built by Kiangnan Dock Co., Shanghai. Launched on 14 June and 28 May 1927 respectively. Mei Yuan was presented to China by the U.S. Government in March 1942. Sister ship was recovered from Japanese hands and presented to China in 1946.



TAI YUAN

Official

Ex-CHANG TEH (ex-Seta)

Displacement:
Dimensions:
Guns:
Machinery:
Boilers:
Oil fuel:
Complement:

305 tons
180 × 27 × 31 feet
2—3 inch, 6 M.G.
Triple expansion. 2 shafts, 1.H.P.: 2,100=14 kts.
2 Kampon

Japanese prize, built at Harima yard. Launched in 1923. Ex-Japanese Kagada of the me class may still exist.

River Gunboats - continued

Ex-KIANG KUN (ex-Japanese Narumi, ex-Italian Ermanno Carlotto)

180 tons standard 160 × 24½ × 2½ feet 2—3 inch, 6 M.G. Designed 1.H:P.: 1.100=14 kts. (max.) 2 Yarrow 56 tons 60 Displacement: Dimensions: Guns: Machinery:

Boilers: Oil: Complement:

Built by Shanghai Dock & Engineering Co. Launched in 1921. Completed in 1921. Shallow draught river gunboat. Twin screws in tunnels.

x-FAKU (ex-French Balay)

Displacement: Dimensions: Guns: Machinery:

201 tons 167½, 179 (o.a.)×23×5 feet 1—3 inch AA., 2—1 pdr., 4 M.G. Triple expansion. 1.H.P.: 920=14 kts. 2 Fouche water tube 45 tons coal 900 miles at 14 kts.

Machinery:
Boilers:
Fuel:
Range:
Complement:

Built by Chantiers de Bretagne, Nantes, Launched in 1920, Completed in 1921.

Ex-HO HSEUH (ex-Chinese Yang Ch'i, ex-Japanese Toba)

Displacement: Dimensions:

215 tons $180\times27\times2^{\frac{1}{2}}~\text{feet}~(\textit{mean}),~4~\text{feet}~(\textit{max.})$ 3—3 inch. 3—25 mm. AA., 3 M.G. Triple expansion. 2 shafts. I.H.P.: 900=9 kts. 80 tons 80 Guns: Machinery:

Boilers: Coal: Complement:

Former Japanese shallow draught river gunboat. Built by Sasebo, Japan. Launched in 1911.



HHO HSEUH

Official

Disposal

It is reported that the former Portuguese very shallow draught gunboat ex-Wu Fang (ex-Japanese Malko, ex-Portuguese Macau) built by Yarrow & Co. Ltd., Scotstoun, Glasgow, in 1909 (see particulars in the 1962-63 and earlier editions) was disposed of in 1963.

BOOM DEFENCE VESSELS

I Ex-British "Bar" Type

Ex-Japanese No. 101 (ex-H.M.S. Barlight)

750 tons standard (1,000 tons full load) 150 (pp.), 1731 (o.a.) × 324 × 91 feet 1—3 inch d.p., 6 M.G.
Triple expansion. I.H.P.: 850=11.75 kts. 2 single-ended 32 Displacement: Dimensions: Guns: Machinery: Boilers: Complement:

Boom defence vessel of British "Bar" Class. Built by Lobnitz & Co. Ltd., Renfrew. unched on 10 Sep. 1938. Captured by Japanese in 1941. Acquired by China in

5 Ex-U.S. "Tree" Class

Displacement: Dimensions: Guns: Machinery:

560 tons standard (805 tons full load) 146 (w.l.), 163 (o.a.) \times 30½ \times 11½ feet 1—3 inch AA. Diesel-electric. B.H.P.: 800=13 kts.

Former United States netlayers of the "Tree" class taken over by the People's Republic.

SURVEY SHIPS

Ex-CHUNG NING (ex-Japanese Takebu Maru)

Displacement: Dimensions: Machinery:

200 tons standard $115\times16\times6$ feet Speed: 10 kts.

Former Japanese, Employed for hydrographic and general purpose duties.

Ex-FUTING

Displacement: Dimensions: Machinery:

 $\begin{array}{c} 160 \text{ tons } \text{standard} \\ 90 \times 20 \times 8 \text{ feet} \\ \text{Speed: } 11 \text{ kts.} \end{array}$

REPAIR SHIP

TAKU SHAN (ex-Hsing An, ex-U.S.S. Achilles, ARL 41, ex-LST 455) Displacement:

Dimensions: Guns: Machinery:

1,625 tons light (4,100 tons full load) 316 (w.l.), 328 (o.a.) \times 50 \times 11 feet 1—3 inch, 8—40 mm. AA. Diesel-electric. 2 shafts. B.H.P.: 1,800=11 l.cs.

Launched on 17 Oct. 1942. Burned and grounded in 1949, salved and refitted.

LANDING SHIPS

20 Ex-U.S. LST Type

Ex-CHUNG 122 (ex-Ch'ing Ling)
Ex-CHUNG 125
I MENG SHAN (ex-Chung 106 ex-U.S.S.
LST 589)
No. 16
No. 258
TA PIEH SHAN
TAI HSING SHAN
SZU CH'ING SHAN CHANG PAI SHAN
CHING KANG SHAN
Ex-CHUNG 101 (ex-U.S.S. LST 804)
Ex-CHUNG 102 (ex-U.S.S. LST)
Ex-CHUNG 107 (ex-U.S.S. LST 1027)
Ex-CHUNG 110
Ex-CHUNG 111 (ex-LST 805)
Ex-CHUNG 116 (ex-U.S.S. LST 406)

Displacement: Dimensions: Machinery: Complement:

1,653 tons standard (4,080 tons full load) 316 (w.l.), 328 (o.a.) \times 50 \times 14 feet Diesel. 2 shafts. B.H.P.: 1,700=11 kts. 80 to 210

There are now reported to be 20 ex-U.S. LSTs in naval service and eleven other ex-U.S. LSTs in the merchant service.

13 Ex-U.S. LSM Type

Ex-CHUAN SHIH SHUI Ex-HUA 201 (ex-U.S.S. Ex-HUA 202 (ex-U.S.S. Ex-HUA 204 (ex-U.S.S. Ex-HUA 205 (ex-U.S.S. Ex-HUA 207 (ex-U.S.S. Ex-HUA 208 (ex-U.S.S. Ex-HUA 209 (ex-U.S.S. LSM 153)
Ex-HUA 211
Ex-HUA 212
Ex-HUAI HO (ex-Chinese Wan Fu)
Ex-HUANG HO (ex-Chinese Mei Sheng,
ex-U.S.S. LSM 433)
Ex-YUN HO (ex-Chinese Wang Chung) LSM 112) LSM 248) LSM 430) LSM 336) LSM 282) LSM 42)

Displacement: Dimensions: Machinery: Complement:

743 tons beaching (1,095 tons full load) 196½ (w.l.), 203½ (o.a.) \times 34½ \times 8¼ feet Diesel, 2 shafts. 2.800=12 kts. 60 to 120

Built in U.S.A. in 1944-45. Some were converted for minelaying. Armament varies.

LANDING CRAFT

16 Ex-U.S. LSIL Type

Ex-CHU TIEN (ex-Chinese Lien Kuang, ex-U.S.S. LCI 517) Ex-KU CHOU Ex-U.S.S. LCI 488 Ex-LIEN PI (ex-U.S.S. LCI 514) MIN 301 MIN 303 MIN 306 MIN 311 MIN 331 Ex-YUNG KAN (ex-Chinese Lien Yung, ex-U.S.S. LCI 632)

Displacement: Dimensions: Machinery: Complement:

230 tons light (387 tons full load) $159\times23\frac{1}{2}\times5\frac{1}{2}$ feet Diesel. 2 shafts. B.H.P.: 1,320=14 kts. 30 to 80 to 80

Built in U.S.A. in 1943-45. Reported to be fitted with rocket launchers. Some are fitted as minesweepers. Armament varies.

10 Ex-U.S. LCU (ex-LCT) Type

Ex-HO CHIEN (ex-U.S.S. LCT 515) Ex-HO YUNG (ex-U.S.S. LCT 1171)

Displacement: Dimensions: Machinery: Oil fuel:

160 tons light (320 tons full load) 105 (w.l.), 119 (o.a.) \times 33 \times 5 feet Diesel, 3 shafts. B.H.P.: 475=10 kts. 80 tons

General
Former United States Navy Tank Landing Craft later reclassified as Utility Landing
Craft.
There are reported to be ten utility landing craft comprising two of the exBritish LCT (3) class and eight of the ex-U.S. LCT (5) and LCT (6) class.

SUPPLY SHIPS

8 Ex-U.S. Army FS Type

Ex-U.S. Army FS 146 (ex-Clover) Ex-U.S. Army FS 155 (ex-Violet) Ex-TA CHEN (ex-U.S.)

Ex-U.S. Army FS----

Displacement:

1,000 tons standard 175 (o.a.) \times 32 \times 10 feet G.M. diesels, B.H.P.: 1,000=12 kts, Dimensions: Machinery:

Built in U.S.A. in 1944-45. Two are reported to be employed as motor torpedo

TRANSPORT

CHIAO IEN

Displacement:

1.873 tons

Formerly a Chinese Nationalist troop transport. Mined on 28 July 1949, Suffered machinery derangement but no hull damage. After survey crew hoisted Communist flag and took her to Canton.

OILERS

There are reported to be two ex-U.S. "Mattawee" Class petrol tankers and three ex-U.S. 174 ft. yard oilers of the "YO" type.

TUGS

There are reported to be at least two tugs of the U.S.S.R. type, two of the U.S. Navy ATA type, two of the U.S. Army type, and five of the U.S. Army harbour tug type.
There are also reported to be more than 125 armed motor junks and over 100 armed motor launches.

Completed

COLOMBIA

Administration

Commandant of the Navy: Vice-Admiral Orlando Lemaitre Torres

Chief of Naval Staff:

Captain Eduardo Melendez Ramirez

Naval Attaché in Washington: Captain Jaime Parra Ramirez

Ships' names are prefaced by the letters "A.R.C." (Armada Republica de Colombia)

Personnel

1966: 700 officers and 6,500 men

Mercantile Marine

Lloyd's Register of Shipping 38 vessels of 159,506 tons gross

DESTROYERS (Destructores)

2 Modified Swedish "Halland" Type Displacement: Dimensions: ×12 feet 6—47 inch (3 twin turrets), 4—40 mm. AA. (single mounts) 4—21 inch 1 quadruple rocket launcher De Laval double reduction geared turbines. 2 shafts. S.H.P.: 55,000 Guns: Tubes:

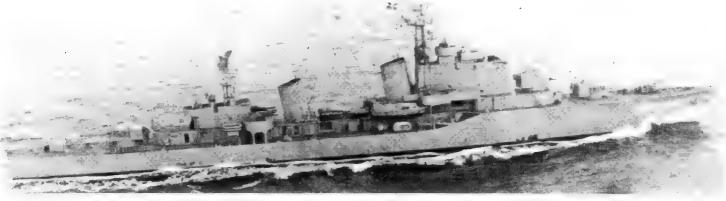
No. Laid down Launched SIETE DE AGOSTO VEINTE DE JULIO Nov. 55 Oct. 55 19 June 56 26 June 56 31 Oct. 58 15 June 58 05

Boilers: Complement: 2 Penhöet. Motala Verkstad 260 (20 officers, 240 men) General

General Modified "Halland" type ordered in 1954. Built in Sweden by Götaverken and Kockums respectively. The hull and machinery are similar to the Swedish "Halland" type, but they have different armament (six 4-7 inch instead of four, no 57 mm, guns, four 40 mm. guns instead of six, and four torpedo tubes instead of eight)

and different accommodation arrangements. They have an anti-submarine rocket projector, more radar and communication equipment, and air conditioned living spaces, having been designed for the tropics. The change of name from 13 de Junio to 7 de Agosto was decreed by the Colombian Navy in July 1957. Photographs

A photograph of 7 de Agosto appears in the 1961-62 to 1965-66 editions



20 DE JULIO

A/S weapons: Machinery:

1966, Columbian Navy, Official

I Ex-U.S. "Fletcher" Type

2,100 tons standard (3,050 tons full load) Displacement:

Dimensions:

Tubes:

full load)

376½ (a.a.)×39½×12¼ (mean),

18 (max.) feet

4—5 inch, 38 cal., 6—3 inch,

50 cal., AA.

5—21 inch (quintupled)

2 fixed Hedgehogs. 1 D.C. rack,

2 side-launching torpedo racks

2 sets G.E. geared turbines. 2

shafts, S.H.P.: 60,000=35 kts.

4 Babcock & Wilcox

650 tons

6,000 miles at 15 kts. A/S weapons: Machinery:

Boilers: 650 tons 6,000 miles at 15 kts, 300 (peace) 350 (war) Oil fuel: Radius: Complement:

General

Former United States destroyer of the "Fletcher" class. Transferred from the U.S. Navy to the Colombian Navy at Boston, Massachusetts, in 1961, and renamed Antioquia.

The former destroyer named Antioquia (ex-Portuguese Douro)) and her sister ship Caldas (ex-Portuguese were scrapped in 1961.

ANTIOQUIA (ex-U.S.S. Hale, DD 642)

Pennant No. Builders Laid down Launched Completed
DD 01 Bath Iron Works 23 Nov. 1942 4 Apr. 1943 15 June 1943 Corporation



ANTIQQUIA

1963, Colombian Navy, Official

"Almirante Padilla" Class

ALMIRANTE BRION (ex-U.S.S. Burlington, PF 51)

1,430 tons standard (2,100 tons .,730 tons standard (2,100 tons full load) 303×37½×13½ feet 3—3 inch, 50 cal.; 6—40 mm. Displacement: Dimensions: Guns:

AA.
Hedgehog, 6 D.C.T., 2 D.C.R.
Triple expansion. 2 shafts.
1.H.P.: 5,500=20 kts.
2, of 3-drum type
645 tons capacity A/\$ weapons: Machinery:

Boilers: 645 tons capacity 9,500 miles at 12 kts. 147 officers and ratings Oil fuel: Radius: Complement:

General

General
Former United States patrol escort of the "Tacoma" class. Similar to the original British "River" class frigate design. Almirante Brion was acquired from the United States Navy in 1953, and served 14 months in Korean waters.

Photographs A starboard broadside view of Almirante Brión appears in the 1956-57 to 1962-63 editions.

Disposals Of this class, Captain Tono, FG 12 (ex-U.S.S. Bisbee), was withdrawn from service in Dec. 1962, and Almirante Padilla, FG 11 (ex-U.S.S. Groton) in Jan. 1965.

FRIGATES (Fragatas)

Laid down: Pennant No.: **Builders:** Launched: Completed: FG 14 Consolidated Stee! Corp., Los Angeles 7 Dec. 1943 19 Oct. 1943 3 Apr. 1944 MAN AND THE

ALMIRANTE BRION

1965, Colombian Navy, Official

DESTROYER TRANSPORT

ALMIRANTE PADILLA (ex-U.S.S. Tollberg, APD 103, ex-DE 593)

Displacement: 1,400 tons standard (2,130 tons full load)

Dimensions: 300 (w.l.), 306 (o.a.)×37×12\(\frac{2}{3}\) (max.) feet

Hackinery: G.E. turbo-electric. 2 shafts. S.H.P.: 12,000=23·6 kts.

Oil fuel: 350 tons

Radius: 5,500 miles at 15 kts.

Complement: 204 accommodation plus 162 troop capacity

Built by Bethlehem S.B. Co., Hingham, Mass. Laid down on 30 Dec. 1943, faunched on 12 Feb. 1944, completed on 31 Jan. 1945, Former U.S. high speed transport (converted destroyer escort) transferred in 1965.



ALMIRANTE PADILLA

1965, Colombian Navy, Official

COASTGUARD VESSELS

CARLOS E. RESTREPO

PEDRO GUAL

Displacement: Dimensions: Guns.

ESTEBAN JARAMILLO PI 123.5 tons 107½ (pp.),×18×6 feet 1—20 mm. AA. 2 Maybach diesels. B.H.P.; 2,450=26 kts.

General Built by Werft Gebr. Schürenstedt K. G. Bardenfleth in 1964. Pennant Nos. AN 206, AN 205 and AN 204, respectively.



PEDRO GUAL

1965, Colombian Navy, Official

OLAYA HERRERA

40 tons
68½ (pp.)×12½×3½ feet
1—:50 Browning AA.
2 Merbens diesels. B.H.P.: 570 Displacement: Dimensions:

Guns: Machinery:

Built by Astilleros Magdalena, Barranquilla, in 1960. Pennant No. AN 203.

GENERAL RAFAEL REYES

GENERAL VASOUES COBO

Displacement: Dimensions:

Guns:

146 tons 118 (pp.), 1243 (o.a.)×23×5 feet 1—40 mm.

Machinery:

2 Maybach diesels, B.H.P.; 2,400=18 kts.

Built by Lürssen Werft, Vegesack. Launched on 10 Nov. and 27 Sep. 1955, respectively. Delivered in May 1956. Pennant Nos. AN 01 and AN 02 respectively. Photograph of General Vasques Cobo in the 1957-58 to 1964-65 editions.

ESPARTANA

Displacement: Dimensions:

Guns. Machinery: 50 tons 90 (w.l.), 96 (o.g.) \times 13½ \times 4 feet 1—20 mm. AA. 2. diesels. B.H.P.; 300 \times 13·5 kts.

General Launched on 22 June 1950 at Cartagena Naval Dockvard, Pennant No. GC 100.



ESPARTANA

1964, Colombian Navy, Official

CAPITAN BINNEY

Displacement: Dimensions: Machinery:

23 tons $67\times10\frac{1}{2}\times3\frac{1}{2}$ feet Diesels. B.H.P.: 115=13 kts.

Built at Cartagena in 1947. Buoy and lighthouse inspection boat. Named after first head of Colombian Naval Academy, Lt-Commander Ralph Douglas Binney, R.N. Pennant No. GC 101. Photograph in the 1961-62 to 1964-65 editions.

RIVER GUNBOATS

3 "Arauca" Class LETICIA

ARAUCA

 $\begin{array}{lll} 184 & tons \\ 163 \frac{1}{3} & (o.d.) \times 23 \frac{1}{3} \times 2 \frac{1}{4} & feet \\ 2-3 & inch. d.p., 50 & cal. 4-20 & mm, \\ 2 & Caterpillar engines, B.H.P.: 916=13 & kts. \\ 1.000 & miles \\ 43 & & & & & & \\ \end{array}$

Displacement: Dimensions: Guns: Machinery: Range: Complement:

General Built by Union Industrial de Barranquila (Unial) Colombia, Launched in 1955. Completed in 1956. Penmant Nos. CF 37, 36 and 35 respectively. A photograph of Arauca appears in the 1957-58 to 1960-61 editions, and of Leticia in the 1961-62 to 1965-66 editions.



RIOHACHA

1966, Colombian Navy, Official

RIOHACHA

2 "Barranguila" Class

BARRANQUILA

142 tons
130 (pp.), 137½ (o.a:) \times 23½ \times 2½ (max.) feet
2—3 inch, 1—20 mm. AA., 4 M.G.
2 Gardner semi-diesels. 2 shafts, working tunnels.
H.P.: 600=15·5 kts.

Displacement: Dimensions: Guns: Machinery:

Complement:

General
Both built by Yarrow & Co. Ltd., Scotstoun, Glasgow, and launched on 10 May
1930, and 26 Mar. 1930, respectively. Barrangulla was modernised in Cartagena
with new armament, engines, auxiliaries and superstructure. Pennant Nos. CF 31
and 33 respectively. Photograph of Cartagena in the 1957-58 to 1960-61 editions.

Santa Marta. CF 32, was withdrawn from service in Dec. 196. The river gunboat Presidente Mosquera was scrapped in 1961.



BARRANQUILA

1961, Colombian Navy, Official

GORGONA

TENDERS

Displacement: Dimensions:

560 tons 135×29½×9½ ft. 2 Nohab diesels. B.H.P.: 910=13 kts.

Machinery:

Built by Astillero Lidingoverken. Launched in May 1954. Permant No. FB 161. Formerly classified as a tender. Recently employed in the hydrographic service.



GORGONA

1963, Colombian Navy, Official

RAFAEL MARTINEZ

Displacement: Dimensions:

38 tons 56 (ρ , ρ ,), 57 $\frac{1}{2}$ (σ , σ .) \times 15 \times 8 feet 2 six-cylinder diesels. B.H.P.: 120

A new tender for the Colombian Navy, officially named "S. D. Rafael Martinez".

JAMARY

Displacement:

146×25½×8 feet 43

Complement:

Small tender equipped as a naval hospital ship with beds for 80 patients.

There are also Rodriguez Zamora (ex-U.S.N. ARD 28), 6,700 tons full load, 488 (o.a.)×81 feet, crew 109, transferred from the United States Navy, officially rated as auxiliary floating dry docl; Capitan Eloy Mantilla (ex-U.S.N. YR 66), 516 tons standard, 150 (o.a.) ×34 feet, crew 24, transferred from the U.S. Navy, rated as floating workshop; floating dock Manuel Laro and repair boat Victor Cubillos.

SMALL TRANSPORTS

MARIO SERPA (1953)

CIUDAD DE QUIBDO

Displacement:

Dimensions

633 tons $165{\times}23\frac{1}{3}$ feet 1 Mai diesel. 1 shaft. B.H.P.: 390=11 kts. 32 tons 12Machinery: Oil fuel:

General

General

Built by Gebr. Sander Delfzijl, in the Netherlands. Photograph in the 1957-58 edition. Pennant No. TM 43.

BELL SALTER (ex-Souris, ex-Leccarmaro II). Pennant No. TM 41.

Displacement:

Dimensions: Machinery:

60 tons $82\times14\times5\frac{1}{2}$ feet 2 G.M. diesels, r.p.m. 1,500 Speed 8 kts.

Recent Disposals

The small transport Cludad de Pereira, TM 42, was withdrawn from service in Dec. 1962. The small transport Quindio was officially deleted from the effective list in Jan. 1965.

ALBERTO GOMEZ (1954) HERNANDO GUTIERREZ (1953)

Displacement:

70 tons 82×18×2½ feet Dimensions:

Machinery:

2 G.M. diesels. B.H.P.: 260=9 kts. 4 tons 10 (berths for 56 troops) Complement:

General River transports. Built at Cartagena in 1953-54. Named after Army officers. Photograph of Alberto Gomez in the 1954-55 to 1957-58 editions. Launch dates above. Nos. TF 53, 52, 51.

The hulls of the fast transports (modified destroyer escorts) Brock (APD 93), Myers (APD 105) and Upham (APD 99) were acquired from the United States Navy in 1962 and converted into power plants.

OHERS

COVEÑAS (ex-M/T Randfonn)

Measurement:

10,342 tons gross, 5,996 tons net, 16,270 tons

Dimensions:

10,342 tons gross, 5,996 tons net, 16 deadweight 515} (o.a.) ×64×30} (mox.) feet Diesel. 1 shaft. B.H.P.: 6,000=14·5 kts. 49 (7 Officers, 42 men)

Machinery: Complement:

Built by Gotaverken in 1950. Acquired in 1966. Capacity 136,250 barrels. Pennant No. BT 65.



COVENAS

1966. Colombian Navv. Official

ANTONIO DE AREVALO (ex-Gronland)

22,682 tons gross, 16,800 tons deadweight $549\frac{1}{8}\times68\times30$ (max.) feet 1 MAN diesel. B.H.P.: 6,650=15 kts. Measurement:

Machinery:

General

Deutsche Werft, Built by Deutsche Werft, Hamburg, in 1952. Purchased from commerical sources in 1959. Pennant No BT 64. Photograph in 1963-64 to 1965-66 editions. commerical

MAMONAL

Displacement: Measurement: Dimensions:

5,984 tons 3,150 tons gross; 3,925 tons deadweight; 2,063 tons net $325\times48\frac{1}{2}\times21\frac{3}{2}$ (max.) feet Diesel. 1 shaft. B.H.P.: 1,400=10 l.ts.

Machinery: Complement:

Fleet oiler. Built by Todd Shipyard, Houston. T-AOG type. Capacity 30,000 barrels.



MAMONAL

1965, Colombian Navy, Official

SANCHO JIMENO (ex-Transmere, ex-U.S.S. Klamichi AOG 73)

Displacement:

Dimensions: Machinery:

1.200 tons light (6,000 tons full load)
325×48×19 feet
1 Enterprise engine, B.H.P.: 1,400=11 kts.

Complement:

Launched in 1943, Purchased in 1952, Pennant No. BT 63. The oiler Cabimas, formerly used as a receiving ship at Cartagerra, was scrain 1961. The oiler Blaz de Lezo, BT 62 (ex-U.S.S. Kalamazoo, AOG 30) officially deleted from the list in Jan. 1965.

PATROL MOTOR LAUNCHES

ALBERTO RESTREPO (1 Oct. 1952) CARLOS GALINDO (1954) HUMBERTO CORTES (26 Nov. 1952) JUAN LUCIO (2 May 1953)

> Displacement: 35 tons

Dimensions: 76‡ (pp.), 81‡ (o.a.)×12×2‡ feet 1—20 mm. AA., 4 M.G. 2 G.M. diesels, B.H.P.; 260=13 kts. Guns: Machinery: Complement:

General

Built at Cartagena Naval Dockyard in 1952-55. Launch dates after the names above. Permant Nos. LR 125, 128, 126 and 122, respectively. Guardiamarina Sabalza and Teniente Asmussen were sold in 1961. A photograph of Alberto Restrepo appears in the 1957-58 to 1964-65 editions.



HUMBERTO CORTES

Displacement:

Dimensions: Machinery; **Euel:**

1965, Colombian Navy, Official

ALFONSO VARGAS (3 July 1952) FRITZ HAGALE (19 July 1952)

33 tons
72 (pp.), 76 (o.a.)×12×23 feet
1—20 mm. AA., 4 M.G.
2 G.M. diesels, B.H.P.: 280=13 kts.

tons

10

Complement:

Built at Cartagena naval base. Designed for operations on rivers. Named after naval officers, Launch dates above. Pennant Nos. LR 123 and 124 respectively. A photograph of Fritz Hagale appears in the 1956-57 to 1963-64 editions

DILIGENTE INDEPENDIENTE

PALACE TORMENTOSA TRIUNFANTE VALEROSA

VENGADORA VOLADORA

Launched at the Naval Base, Cartagena, in 1942-54. The boats vary in detail. Parmant Nos. LR 138, 134, 130, 136, 133, 137, 139 and 135, respectively.

TUGS

PEDRO DE HEREDIA (ex-U.S.S. Choctaw, ATF 70)

1.235 tons standard, 1.764 tons full load 195 (w.l.), 205 (o.a.) × 38½ × 15½ (max.) feet 4 diesels, electrical drive. B.H.P.: 3,000=16·5 kts. 19,000 miles ean tug of the "Apache" class. Launched on 18 Oct. Displacement: Dimensions: Machinery:

Former United States ocean 1942. Pennant No. RM 72.

TENIENTE SORZANO

Displacement: Dimensions:

54 tons 60 (pp.), 65} (o.a.)×17½×9 feet 6-cylinder diesel. B.H.P.: 240

Machinery:

ANDAGOYA

Displacement:

Machinery:

100 tons Caterpillar diesel, B.H.P.: 80=8 kts.

General General
Launched in 1928. Re-engined in 1955. Pnenant No. RM 71. Photograph in 1957-58 edition.

ABADIA MENDEZ
Displacement: 39 tons
Dimensions: 52\frac{1}{3} \frac{1}{1} \frac{1}{3} \fr

General Built in Germany in 1924. Harbour tug. There is also the harbour tug La Colombiana.

63×14×2½ feet 2 G.M. diesels. B.H.P.: 260=9 kts.

CANDIDO LEGUIZAMO CAPITAN HERNANDO BOCANEGRA CAPIPTAN ALVARO RUIZ CAPITAN CASTRO

CAPITAN RIGOBERTO GIRALDO CAPITAN JULIO PATINO CAPITAN VLADIMIR VALEK TENIENTE LUIS BERNAL

Displacement: Dimensions: Machinery:

General

TENIENTE MIGUEL SILVA
Dimensions:

Machinery:

 $73\frac{1}{3} \times 17\frac{1}{2}$ feet 2 diesels. B.H.P.: 260=9 kts. 2 diesels. B. 2.200 miles

50 tons

Radius:

River tug. Built by Union Industrial (Unial) of Barranquila. Pennant No. There is also the river tug Joves Flallo. Pennant No. RR 90. Mayor Ehnesto R was sold, and the river tug Coronel Mora Angueyra was scrapped in 1961.

COMMONWEALTH

Commonwealth Naval Forces are:—
AUSTRALIA, CANADA, CEYLON, FIJI, GHANA, HONG
KONG, INDIA, JAMAICA, KENYA, MALAYSIA, MAURITIUS,
NEW ZEALAND, NIGERIA, PAKISTAN, SIERRA LEONE,
TRINIDAD AND TOBAGO, UNITED KINGDOM

CONGO

The Republic of Congo (formerly Middle Congo, of French Equatorial Africa), which became independent on 15 Aug. 1960, has formed a naval service.

The patrol boat Reine N'Galifourou (ex-VC 4, red to the Congo on 16 Nov. 1962, was returne and reinstated on the Navy List. fourou (ex-VC 4, P 754), which was transfer-1962, was returned to France on 18 Feb. 1965

COSTA RICA

The Coast Guard includes two 90-ft, wooden patrol boats and an armed tug.

CUBA

Personnel

Naval Establishments

Mercantile Marine

1966: 6,000 (380 officers, 220 subordinate officers, and 5,400 men)

Naval Academy: At Mariel, for officers Naval School: At Morro Castle, for men

Lloyd's Register of Shipping: 68 vessels of 160,993 tons gross

Laid down

FRIGATES (Fragatas)

Name ANTONIO MACEO (ex-U.S.S. Peoria, PF 67) JOSÉ MARTI (ex-U.S.S. Eugene, PF 40) MAXIMO GÓMÉZ (ex-U.S.S. Grand Island, PF 14)

Leathem D. Smith, S.B. Co., Sturgeon Bay, Wisconsin Consolidated Steel, Los Angeles, California Kaiser Cargo Inc., Richmond, California F 302 F 301 F 303

Bullders

Launched 4 June 1943 2 Oct. 12 June 1943 6 July 27 Nov. 1943 19 Feb.

Completed

3 Ex-U.S. PF Type

Jex-U.S. PF Type

Displacement:

1,430 tons standard (2,415 tons full load)

Dimensions:

285\(\text{(w.l.)}, 304 \(\text{(o.a.)} \times 37\(\frac{1}{2} \times 13\) feet

Guns:

3-3 inch d.p., 4-40 mm. AA.

(all three) in addition José Marti has 6-20 mm. AA., Adx-imo Góméz 9-20 mm. Ax., adx-imo Góméz 9-20 mm. AA., adx-imo Góméz 9-20 mm. AA., adx-imo Góméz 9-20 mm. AA., adx-imo Góméz 9-20 mm. Ax., adx-imo Góméz 9-20 mm. Ax., adx-imo Góméz 9-20 mm. Ax., adx-imo Góméz 9-20

A photograph of José Marti appears in the 1955-56 to 1959-60 editions, and of Antonio Maceo in the 1960-61 to 1965-66 editions.



MAXIMO GÓMÉZ

Pennant No.

added 1966, Cuban Navy, Official

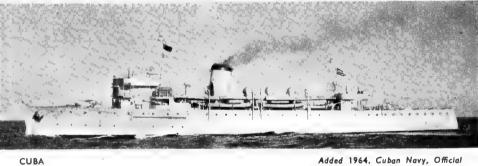
CUBA

Displacement: Dimensions: Guns:

Machinery: Boilers:

2.055 tons 260 (pp.) × 39 × 14 feet 2—4 inch, 2—3 inch, 4—57 mm., 5—20 mm. AA., 2 D.C.T. Triple expansion. I.H.P.: 6,000 =14 kts. 2 Foster Wheeler 3-drum type

Originally rated as a crucero (cruiser). Built by Cramp, Philadelphia. Launched on 10 Aug. 1911. Reconstructed in 1936-37. Converted from coal to oil burning. Completed further reconstruction and modernisation in 1956, when hull and machinery were overhauled, bridge rear constructed, tripod must suppressed and replaced by a pole mast, radar equipment installed, funnel cap altered and height of masts reduced.



Added 1964, Cuban Navy, Official

Displacement: Dimensions:

Guns:
A/S weapons:
Machinery:

PATROL ESCORTS (Buques de Patrulla y Escolta)

2 Ex-U.S. PCE Type Escort Patrol Vessels

CARIBE (ex-U.S.S. PCE 872) SIBONEY (ex-U.S.S. PCE 893) Name: Pennant No.:

PE 201 Albina Eng. & Mach. Works, Portland, Oreg. 30 Jan. 1943 24 Mar. 1943 29 Nov. 1943 PE 302 Williamette Iron & Steel Corp., Portland, Oreg. 27 Oct. 1942 8 May 1943 25 July 1944 Laid down: Launched: Completed:

640 tons standard (903 tons full load) 180 (w.l.), 1841 (o.a.) × 33 × 91 feet 1—3 inch d.p., 3—40 mm. AA., 4—20 mm. AA. Hedgehog, D.C.T. and racks 12 cylinder diesels. 2 shafts. B.H.P.: 1,800=14 kts. 99 Displacement: Dimensions: Guns: A/S weapons: Machinery: Complement:

General Built in U.S.A. Former United States escort patrol vessels. Box deck-house amid-ship was removed from Carlbe in 1953. Both completed a refit in 1956 at Key West Naval Base, when new anti- submarine armament and equipment were installed.

6 Ex-U.S.S.R. "Kronstadt" Type Submarine Chasers 300 tons standard (350 tons full load) 167\frac{1}{2}\text{ 19}\frac{1}{2}\text{ 9 feet} 1-3.9 inch, 2-37 mm. AA., 3-20 mm. AA., D.C. 6 on two racks at the stern 2 diesels. 2 shafts. Speed=22 kts. Displacement: Dimensions: Guns: Mines: Machinery: Former Soviet submarine chasers reported transferred from the U.S.S.R. in 1962.

215 tons 1473×18×61 feet 4—25 mm. (2 twin) 4 five-barrelled rocket launchers 3 diesels. B.H.P.: 3,500=26 kts.

The last of six boats was transferred from the U.S.S.R. in Sep. 1964.

PATROL VESSELS 6 Ex-U.S.S.R. "S.O.I." Type Submarine Chasers

MOTOR GUNBOATS

12 Ex-U.S.S.R. "Komar" Type Guided Missile Boats

75 tons standard (100 tons full load)
88 (o.a.)×21×6 feet
2 launchers for missiles of 10 to 15 miles range
Speed=40 kts. Displacement: Dimensions: Guided weapons: Machinery:

Former Soviet motor gunboats reported transferred from the U.S.S.R. in 1962.

MOTOR TORPEDO BOATS

12 Ex-U.S.S.R. "P 6" Type

75 tons standard (100 tons full load) 88×21×6 feet 4—25 mm. AA. (two twin) 2—21 inch (two single) Speed=45 kts. Displacement: Dimensions: Guns: Tubes: Machinery:

12 Ex-U.S.S.R. "P 4" Type

Displacement: Dimensions: Guns: Machinery: 4—25 mm. AA. (2 twin) Diesels. B.H.P.: 2,000=42 lets.

Former Soviet motor torpedo boats, transferred from the U.S.S.R. in 1962-64.



CARIBE

Cuban Navy, Official

The old sloop Patria, at Mariel as a permanent installation of the Naval Academy training midshipmen, has been removed from the effective list.

Losses:

The patrol vessel Baire (ex-Tribesman, ex-U.S.S. PC 790) former United States submarine chaser, sank at her dock at the isle of Pines, Cuba, on 17 Apr. 1961, during the revolution. She was either scuttled by her crew or sunk by aircraft.

A Soviet-built Cuban torpedo boat was destroyed by underwater mine off the Isle of Pines by an anti-Government group in Dec. 1963.

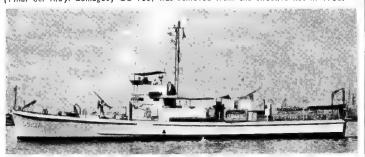
COASTGUARD CUTTERS (Guardacostas)

ORIENTE GC 104 (ex-SC 1000)
PINAR DEL RIO GC 108 (ex-SC 1301) HABANA GC 107 (ex-SC 1291) LAS VILLAS GC 106 (ex-SC 1290)

95 tons Displacement:

 $107\frac{1}{2}$ (w.l.), 111 (o.a.)×17×6 $\frac{1}{2}$ feet 2—20 mm. AA G.M diesels, 2 shafts. B.H.P.: 1,000=15 kts. Machinery:

Built in the United States by Dingle Boat Works (Oriente), W. A. Robinson, Inc., Ipswich, Mass. (Havana and Las Villas), and Perkins & Vaughan, Inc., Wickford, R.I. (Pinar del Rio). Camaguey GC 105, was removed from the effective list in 1960.



HABANA

Cuban Navy, Official

LEONCIO PRADO GC 101

Displacement: Dimensions: Guns:

Machinery: Oil:

80 tons $110\times17\frac{2}{3}\times6\frac{1}{5}$ feet 1—20 mm. AA. 2 sets 8-cycle, 2 stroke diesels. B.H.P.: 1,000=15 kts. 2,232 gallons for a cruising radius of 16,000 miles

Construction

Built at Havana. Launched in 1946. Of wooden hulled construction



LEONCIO PRADO

Added 1966, Cuban Navy, Official

GC 11

Displacement:

GC 13

Dimensions:

45 tons $83\times 16\times 4\frac{1}{2}$ feet 1—20 mm. AA. Depth charges 2 Sterling Viking petrol motors, H.P.: 1,200=18 kts. Guns: Machinery:

12 Complement:

Former CS of same numbers. Built in the United States, Launched in 1942-43. Ex-United States Coast Guard Cutters 83351, 83385, 83395, respectively. Of wooder construction. Received from U.S. Navy in March 1943. Rated as Guardacostas, 83 ft. GC 12 and GC 31 have been removed from the effective list.



GC 13

Cuban Navy, Official

GC 32

GC 33

GC 34

GC 14

Displacement: Dimensions:

Guns:

45 tons 83×16×4½ feet 1—20 mm. AA

Machinery:

Complement:

2 Superior diesels. B.H.P.: 460=12 kts.

Built in the United States. Launched in 1942-43. Ex-United States Coast Guard Cutters 56191, 56190. Of wooden construction. A photograph of GC 32 appears in the 1955-56 to 1959-60 editions. GC 31 has been removed from the effective list.

AUXILIARY COAST GUARD CUTTERS

DONOTIVO GC 102 (ex-Capitan Fernandez Quevedo)

Displacement:

130 tons 101×18×7 feet

Dimensions: Machinery:

2 sets diesels. B.H.P.: 360=12 kts.

Built at Havarra. Launched in 1932. A photograph appears in the 1947-48 to 1959-60 editions.

MATANZAS GC 103

Displacement: Dimensions:

Guns:

80 tons 100×18×6 feet 1—1 pdr. 2 Fairbanks Morse diesels. B.H.P.: 180=12 kts.

Wooden hulled, Built at Havana, Launched n 1912. A photograph appears in the 1947-48 to 1959-60 editions. Both of the above ships are rated as Guardacostas

MOTOR LAUNCHES (Ex-M.T.Bs)

R 41 (ex-PT 715)

Displacement: Dimensions:

35 tons 71×19½×5 feet

Guns: M.G. 2 Packard gas engines. 3 shafts, B.H.P.: 3,600=35 kts.

Former U.S. motor torpedo boats of the PT type. Built in the U.S.A. by Annapolis Yacht Yard, Inc., Annapolis, Md. Launched on 9 luly 1945 (R 41) and 17 July 1945 (R 42). Sunk during a hurricane on 5 Oct 1948. but were salvaged and put into service as sea-air rescue craft. Rated as Buques-Auxiliares, ex-Torpederos. Sister R 43 sank on 6 May 1961 after hitting a submerged object off



R 41

Added 1966, Cuban Navy, Official

PATROL CRAFT AUXILIARY

SV 7

Machinery:

SV 8

Length 40 feet 1-50 cal. M.C M.G.

2 G.M. diesels Speed 25 kts.

Later boats of the SV type assigned to naval stations for coastal vigilance, to deal with contraband, and for auxiliary services, rescue and navigation. Equipped with radar.

SV 1

SV 2

SV 3

SV 5

SV 4

SV 14

A3

Displacement: Dimensions: Machinery:

SV 4

6:15 tons
32×10×2} feet
2 Chrysler Crown, B.H.P.; 230=18 kts,
port vigilance, launched in 1953, A photograph of SV 6 Machinery: 2 Chrysler Crown. B.H.P.: 230-18 kts.
Auxiliary patrol boats for port vigilance, launched in 1953. A photograph of SV 6
appears in the 1957-58 edition.
Seven YP type patrol craft were delivered to Cuba, having been buil at Annapolis,
Maryland, U.S.A., during 1956. Three more were delivered later.
It was officially stated in 1960 that plans had been made to acquire twelve new gas

turbine-diesel motor coastguard cutters, two new lighthouse tenders and 15 auxiliary patrol craft of the SV 1 and SV 7 types.

LIGHTHOUSE TENDERS

ENRIQUE COLLAZO (ex-Joaquin Godoy)

Displacement: Dimensions: Machinery:

Dimensions: Machinery:

815 tons 211 \times 34 \times 9 feet Triple expansion. 2 shafts, I.H.P.: 672-8 kts.

Built at Paisley, Scotland. Launched in 1906. Acquired in 1950 from Cuban m cantile marine. Rated as Buque de Servicio de Faros. A photograph appears in 1953-54 to 1957-58 editions.

BERTHA
Displacement:

98 tons $104 \times 19 \times 11$ feet 2 Gray Marine diesels. B.H.P.: 450=10 kts.

Launched in 1944. Pennant No. SF 10. A photograph appears in the 1957-58 edition.

AUXILIARY VESSELS (Buques-Auxiliares)

GRANMA

Al

Yacht with landed in Cuba on 2 Dec. 1956 with Dr. Fidel Castro and the men ho began the liberation war. Historical vessel incorporated into the Navy as an exiliary vessel with the Pennant No. A 11.

The former Presidential Yacht 10 de Marzo (ex-Wakitty) was removed from the auxiliary

Displacement: Dimensions:

60 tons 74 × 15 × 5 feet 1 M.G. 2 diesel engines

Guns: Machinery:

Formerly yachts. A photograph of A3 appears in the 1954-55 to 1957-58 editions.

RESCUE AND SALVAGE VESSEL

10 DE OCTUBRE (ex-ATR 4)

Displacement: Dimensions: Machinery:

852 tons standard (1,315_tons full load)
155 (w.l.), 165½ (o.a.)×33½×16 feet
Triple expansion. I.H.P.: 1,600=12 kts. 2 Babcock & Wilcox D-type, Oil burning

Boilers: Former U.S. ocean rescue tug. Built in the U.S.A. Launched in 1943. Largely of wooden construction. Guns removed. Pennant No. RS 210. Rated as Buque de Rescate y Salvamento. Sister ship 20 de Mayo, and the old survey ship Yaro, were removed from the effective list.

CYPRUS

There are reported to be three patrol boats of the German R-boat type, built in 1943, of 130 tons carrying a 40 mm. AA. gun and a 20 mm. AA gun at a speed of 18 knots; and ten small patrol boats of 50 tons with one or two 20 mm.

DENMARK

Administration

Commander in Chief: Vice-Admiral S. Thostrup, R.D.N.

Chief of Naval Staff: Rear-Admiral O. Brink-Lund, R.D.N.

Naval Attaché, London: Captain H. Norgaard, R.D.N.

Naval Attaché, Washington: Rear-Admiral S. J. Valentiner, R.D.N.

Navy Estimates

1961-62: Kr. 177,100,000 1962-63: Kr. 210,100,000

1963-64: Kr. 231,000,000 1964-65: Kr. 279,100,000 1965-66; Kr. 291,500,000

Personnel

January 1966: 7,200 officers and men

Mercantile Marine

Lloyd's Register of Shipping 923 vessels of 2,561,599 tons gross

SUBMARINES

2 New Construction "Narhvalen" Class German "U 4" Type

MARHVALEN	

Machinery:

NORDKAPEREN

Displacement; Dimensions: Tubes:

370 tons surface (450 tons submerged) $144\frac{1}{3}$ (o.a.)×15 feet 8—21 inch bow, internal 8—21 inch bow, internal Diesels. Electric motors. H.P.: 1,200=17 kts. submerged 21 officers and ratings

These coastal submarines are similar to the German "U-4" class and are being built under licence at the Royal Dockyard, Copenhagen, They are conventionally powered, and fitted with schnorkel installation. "Teardrop". hull. Pennant Nos. S 320 and S 321, respectively (superseding S 330 and S 331 originally allocated).



TUMLEREN

1966, Skyfotos

4 "Delfinen" Class

Displacement:

550 tons standard, 595 tons

Dimensions:

Tubes: Machinery:

550 tons standard, 5.5 tons surface
177×15½×15 feet
4—21 inch
2 Burmeister & Wain diesels.
B.H.P.: 1,200=13 kts. surface.
Electric motors=12 kts. sub-

merged 4,000 miles at 8½ kts. 30

Radius:

Complement:

Construction
Built in the Royal Dockyard, Copenhagen. Engined with diesels of a new type. Equipped with Schnorkel Commissioned: Definen 16 Sep. 1958, Spaekhuggeren 27 June 1959, Tumleren 15 Jan. 1960, Springeren 22 Oct. 1964.

Photographs

Photographs of Delfinen appear in the 1957-58 to 1963-64 editions.

DELEINEN SPÆKHUGGEREN SPRINGEREN TUMLEREN

Pennant No: Laid down 1 July 1954 1 Dec. 1954 3 Jan. 1961 22 May 1956 S 326 S 327 S 329 S 328

Launched Completed 4 May 1956 20 Feb. 1957 26 Apr. 1963 22 May 1958 16 Sep. 1958 27 June 1959 22 Oct. 1964 15 Jan. 1960



SPAEKHUGGEREN

1966, Stefan Terzibaschitsch

FAST FRIGATES

2 New Construction FF (ex-DE) Type

"Peder Skram" Class

Displacement: Dimensions: Guns:

circa 2,200 tons standard 364×36×14 feet 4—5.1 inch, 4—40 mm. AA. suppressed Tubes: A/S weapons:

Machinery:

D.C. 2 diesels. B.H.P.: 4,800 and 2 gas turbines, B.H.P.: 37,000. 2 shafts. Speed=28 kts.

Complement:

General

General

Fast frigates of Danish design built at Helsingör.

They were to have been armed, additionally to guns, with three 21 inch torpedo tubes and the "Terne" anti-submarine weapon,

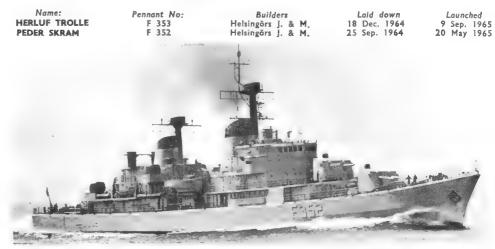
Peder Skram visited Portsmouth in July 1966, but she was without anti-submarine weapons, radar and many items of final equipment.

The pennant numbers allocated originally were D 320 (see illustration in the 1963-64 to 1965-66 editions) and D 321, when they were designated DE (Destroyer Escorts).

Photographs

The adjacent photographs were taken on propelling machinery sea trials during a shoke down cruise and before much of the designed equipment was installed.

Disposals of "Hunt" Class
Of the three former British fast frigates or escort destroyers of the "Hunt" class, Rolf Krake (ex-H.M.S. Calpe) and Valdemar Sejr (ex-H.M.S. Exmoor) were declared or disposal in 1963, and Esbern Snare (ex-H.M.S. Blackmore) was officially stricken from the Navy List in 1966.



PEDER SKRAM

1966, Royal Danish Navy, Official



PEDER SKRAM

1966, Royal Danish Navy, Official

FRIGATES

4 "Hvidbjornen" Class

FF Type

Displacement:

1,345 tons standard (1,650 tons

Dimensions: Guns: Aircraft: Machinery: =18 kts.

Radius: 6,000 miles at 13 kts.

Complement:

General
Ordered in 1960-61. Of frigate type for fishery protection and surveying duties in the North Sea, Faroe Islands, and Greenland waters. They are equipped with a helicopter platform aft. The prototype ship of the class was built by Aarhus Flydedok og maskinkompagni.

Photographs

A starboard bow view of Hvidbjornen appears in the 1963-64 edition.

Disposals of "River" Class
Of the two former British frigates of the "River" class. Niels Ebbesen (ex-H.M.S. Annan) was scrapped in 1963, and Holger Danske (ex-H.M.S. Monnow) in

Disposal of "Flower" Class

The former British frigate of the "Flower" class, Thetis (ex-H.M.S. Geranium) was discarded in 1963.

Disposal of "Huitfeldt" Class

Of the two patrol vessels, formerly coastal destroyers, of the "Huitfeldt" class, Huitfeldt (ex-Nymfen) was discarded in 1965, and Willemoes (ex-Najaden) was officially deleted from the Navy List in 1966.





YAEDDEREN

1966, Royal Danish Navy, Official



INGOLF

1964, Royal Danish Navy, Official

MINELAYERS

4 "Falster" Class MMC Type

Displacement: Dimensions:

1,800 tons standard 246 (pp.), $252\frac{1}{2}$ (o.a.) \times 41 \times 10 feet

Guns:

4—3 inch dual purpose (2 twin

mountings)

Mines: 2 diesels, 2 shafts, B.H.P.: 4,800 Machinery:

=16.5 kts.

Complement:

General New minelayers of a novel Scandinavian-NATO design. Ordered in 1960-61, All are named after Danish Islands, Construction

Construction

The steel hull is flush decked with a raking stem, a full stern, and a prominent knuckle forward. The superstructure has a block outline surmounted by a squat streamlined funnel, two light lattice masts, high angle director control towers fore and aft and whip aerials. The hull is sub-divided by watertight bulkheads and flats to isolate damage, and has been specially strengthened for the navigation. for ice navigation.

Name FALSTER FYEN MØEN SIÆLLAND Pennant No. N 80 N 81 N 82 N 83

Builders Nakskov Skibsvaerft Frederikshavn Vaerft Frederikshavn Vaerft

Lald down 12 Apr. 1962 12 Apr. 1962 4 Oct. 1962 17 Jan. 1963

Launched 19 Sep. 3 Oct. 6 Mar. 14 June Completed 7 Nov. 1963 18 Sep. 1963 29 Apr. 1964 7 july 1964 1962 1962 1963



FALSTER

1966, courtesy Godfrey H. Walker Esq.

4 "Triton" Class

Displacement:

760 tons standard (873 tons full

Dimensions: Guns: A/S weapons:

load)
249\(\frac{1}{2}\) (o.a.)\times 315\times 9 \text{ feet}
2\)
23 inch, 1\(\text{-40 mm. AA.}\)
2 hedgehogs, 4 depth charge throwers

Machinery: Oil fuel:

throwers Fiat diesels, 2 shafts. B.H.P.: 4,400-20 kts. 100 tons 2,400 miles at 18 l/ts. 110

Radius: Complement:

Construction

All four vessels were built in Italy for the Danish Navy under the United States "offshore" account in the Mutual Defense Assistance Program.

Classification

Officially classified as corvettes in 1954, but have "F" pennant numbers like frigates. Photographs

A photograph of Triton appears in the 1956-57 to 1962-63 editions

CORVETTES

BELLONA DIANA FLORA TRITON

Builders Naval Meccanicia, Castellammare Cantiere del Tirreno, Riva, Trigoso Cantiere del Tirreno, Riva, Trigoso Cantiere Navali di Taranto

Launched 9 Jan. 1 19 Dec. 1 25 June 1 12 Sep. 1

31 Jan. 30 July 28 Aug. 10 Aug.



DIANA

Added 1966, courtesy Dr. Ian S. Pearsall

COASTAL MINELAYERS (Minelaeggere)

LANGELAND N 42

Displacement: Dimensions: Guns: Machinery: Complement:

309.5 tons standard, 323 tons full load 133½ (o.a.), 128½ (pp.),×23½×7½ feet 2—40 mm., 2—20 mm. Madsen Diesel. 2 shafts. B.H.P.: 385=11.6 kts.

Construction
Built at the Royal Dockyard. Copenhagen. Laid down in 1950, Launched on 17
May 1950. Completed in 1951,



LANGELAND

1966, Royal Danish Navy, Official

2 "Lougen" Class

LAALAND N 40

LOUGEN N 41

Displacement: Dimensions: Guns-Machinery:

Complement:

240 tons standard (260 tons full load) $105\frac{1}{7}\times21\frac{1}{4}\times6\frac{1}{2}$ feet 2—20 mm. AA. B. & W. diesel. 2 shafts. B.H.P.: 350=10 kts. 31

Construction

Built at the Royal Dockyard, Copenhagen. Both laid down in 1940, launched in 1941 and completed in 1946. A photograph of Lagland appears in the 1957-58 to 1962-63 editions.



LOUGEN

1965, Royal Danish Navy, Official

LINDORMEN N 39

Displacement: Displacement Dimensions: Guns:

604 tons standard (645 tons full load) 175½ (o.a.) 167½ (pp.),×29×8 feet 2-40 mm. AA., 2 M.G.

2<u>—</u> 150 A/S weapons:

Machinery:

Triple expansion. 2 shafts, I.H.P.: 950=12 kts, 2 Thornycroft 3-drum type

Complement;

Construction

Built at the Royal Dockyard, Copenhagen. Laid down in 1939. Launched on 30 Mar. 1940. Completed in 1940. Scuttled in Copenhagen Harbour on 29 Aug. 1943, but was salved and refitted with a new rig.



LINDORMEN

1966, Royal Danish Navy, Official

The coastal minelayers Beskytteren, N 60 (ex-U.S. LSM 390, and Vindhunden, N 61 (ex-U.S. LSM 392, were discarded in 1965.

COASTAL MINESWEEPERS

8 "Sund" Class

AARØSUND M 571 (ex-AMS 127) ALSSUND M 572 (ex-AMS 128) EGERNSUND M 573 (ex-AMS 129) GRØNSUND M 574 (ex-MSC 256)

GULDBORGSUND M 575 (ex-MSC 257)
OMØSUND M 576 (ex-MSC 221)
ULVSUND M 577 (ex-MSC 263) VILSUND M 578 (ex-MSC 264)

350 tons standard (376 tons full load)
138 (pp.), 144 (o.a.)×27×8} feet
2—20 mm.
Diesels. 2 shafts. B.H.P.: 1,200=13 kts. Displacement: Dimensions: Guns: Machinery:

Complement:

General
MSC (ex-AMS) 60 class NATO coastal minesweepers all built in U.S.A. Completed in 1954-56. Photographs of Aaresund appear in the 1956-57 to 1965-66

Agressing was transferred on 24 Jan. 1955, Alssund on 5 Apr. 1955, Egernsund on 3 Aug. 1955, Grensund on 21 Sep. 1956, Guldborgsund on 11 Nov. 1956, Omesund on 20 June 1956, Uivsund on 20 Sep. 1956 and Vilsund on 15 Nov. 1956.



OMØSUND

1966, Royal Danish Navy, Official

SEAWARD DEFENCE CRAFT

9 "Daphne" Class

Name	Penn	ant	No.:	Lo	id do	wn	Lo	unche	đ	C	mple	ted
DAPHNE	P	530		1	Apr.	1960	10	Nov.	1960			1961
DRYADEN	P	531		- 1	July	1960	1	Mar.	1961			1962
HAVFRUEN	Р	533		15	Mar.	1961	4	Oct.	1961			1962
HAYMANDEN	P	532		15	Nov.	1960	16	May	1961			1962
NAJADEN	P	534		20	Sep.	1961	20	June	1962	26	Apr.	1963
NEPTUN		536		1	Sep.	1962	29	May	1963	18	Dec.	1963
NYMFEN		535			Apr.	1962	1	Nov.	1962	4	Oct.	1963
RAN		537		1	Dec.	1962	10	July	1963	15	May	1964
ROTA	Р	538		1.9	July	1963	25	Nov.	1963	20	Jan.	1965

Displacement: Dimensions: Guns:

170 tons
121\frac{1}{20\infty} \text{6}\frac{1}{2} \text{ feet}
1-40 mm, AA.
2-51 mm, rocket launchers. Depth charges
Diesels. 2 shafts. B.H.P.: 2,600=20 kt
1 cruising engine. B.H.P.: 100) Mines: Machinery; Boilers; Complement:

Construction
All built at the Royal Dockyard, Copenhagen. (For disposals of older patrol vessels of the "Sohesten" and "Krieger" classes see 1963-64 edition.)



NAIADEN

1966, Stefan Terzibaschitsch

ROYAL **YACHT** (Kongeskib)

DANNEBROG

Displacement: Dimensions: Guns:

Machinery:

1,130 tons 246 (o.a.) \times 34 \times 11½ feet 2.—37 mm. 2 sets Burmeister & Wain 8-cylinder, 2 cycle diesels. B.H.P.: 1,800=14 kts.

Complement:

General

Built at the Royal Dockyard, Copenhagen, Launched in 1931, Pennant No.: A 540.



DANNEBROG

1965, Royal Danish Navy, Official

MOTOR TORPEDO BOATS

6 New Construction Gas Turbine FPB Type

"Soloven" Class

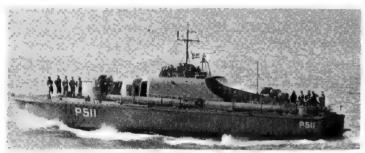
Name F SØLØVEN SØRIDDEREN SØBJORNEN SØHESTEN SØHUNDEN SØULVEN	Pennant No. P 510 P 511 P 512 P 513 P 514 P 515	Laid down 27 Aug. 1962 4 Oct. 1962 9 July 1963 5 Sep. 1963 18 Aug 1964	Launched 19 Apr. 1963 22 Aug. 1963 19 Aug. 1964 31 Mar. 1965 12 Jan. 1966	Completed June 1964* June 1964* Sep. 1965

Displacement: Dimensions: Guns:

95 tons standard (114 tons full load)
90 (pp.), 96 (w.l.), 99 (o.a.)×25½×7 feet
2—40 mm. Bofors AA.
4—21 inch (side)
3 Bristol Siddeley Proteus gas turbines. 3 shafts.
B.H.P.: 12,750=54 kts.
G.M. diesels on wing shafts for cruising=10 kts.
26 Machinery:

Complement:

The design is a combination of the "Brave" class hull form and "Ferocity" type construction. Soloven ("Sea Lion") and Soridderen ("Sea Knight") were built by Vosper Limited, Portsmouth, England (*delivered to the Royal Danish Navy on 12 and 10 Feb. 1965, respectively); and the remaining four under licence by the Royal Dockyard, Copenhagen. A photograph of Soloven appears in the 1964-65 and 1965-64 editions. 66 editions.



SØRIDDEREN

1966, Dr. Giorgio Arra

4 Diesel FPB Type "Falken" Class

Name	Pennant No.	Laid down	Launched	Completed
FALKEN	P 506	1 Nov. 1960	19 Dec. 1961	4 Oct. 1962
GLENTEN	P 507	3 Jan. 1961	15 Mar. 1962	15 Dec. 1962
GRIBBEN	F 508	15 May 1961	18 July 1962	26 Apr. 1963
HØGEN	P 509	1 Sep. 1961	4 Oct. 1962	6 June 1963
Displa	cement.	IIQ tone		

Displacemen Dimensions: Guns: Tubes:

Machinery:

119 tons 118×17½×6 feet 1—40 mm. AA., 1—20 mm. AA. 4—21 irch (side) 3 diesels. 3 shafts, B.H.P.: 9,000=40 kts.

Ordered under U.S. offshore procurement in the Military Aid Programme. All built at the Royal Dockyard, Copenhagen, Named after birds, A photograph of Falken appears in the 1963-64 to 1965-66 editions.



GLENTEN

1966, Royal Danish Navy, Official

6 "Flyvefisken" Class

FLYVEFISKEN P 500 HAIEN P 501

HAVKATTEN P 502 LAVEN P 503

MAKRELEN P 504 SVÆRDFISKEN P 505

Displacement: Dimensions:

110 tons 120×18×6 feet 1—40 mm. AA., 1—20 mm. AA. 2—21 inch

Guns: Tubes:

Machinery:

Complement:

3 diesels. 3 shafts. B.H.P.: 7,500=40 kts.

Three built in Royal Dockyard, Copenhagen, three in Frederikssumd Vaerft. All units are named after fishes. Ordered in 1952, laid down in 1953 and launched in 1954-55.

A photograph of Flyvefisken appears in the 1956-57 to 1963-64 editions, and of Hajen in the 1964-65 and 1965-66 editions.



LAVEN

1966. Royal Danish Navy, Official

Disposals
Of the "Viben" class Tranen P 567 (ex-Storm, ex-S 85) was stricken from the active list in Apr. 1963, Hejren P 563 (ex-Tross, ex-S 117) in 1965, and Viben P 568 (ex-S 68) in 1966. For disposals of the other boats of this type, see 1963-64

INSHORE MINESWEEPERS

4 MSI Type. "Vig" Class

	Pennant No.	Laid down	Launched	Combleted		
ASVIG	M 579	22 Apr. 1959	11 May 1960	6 Sep. 1961		
MOSVIG	M 580	22 Apr. 1959	14 Sep. 1960	25 Oct. 1961		
SANDVIG	M 581	11 May 1960	1 Mar. 1961	1 Feb. 1962		
SÆLVIG	M 582	14 Sep. 1960	14 July 1961	30 Apr. 1962		

Displacement: Dimensions:

180 tons 1131×221×61 feet 2-20 mm. AA. 2 diesels. 2 shafts. B.H.P.: 11,000=13 kts. Guns Machinery:

Complement: 18 All built at the Royal Dockyard, Copenhagen. A photograph of Asvig appears in the 1962-63 to 1965-66 editions.



SANDVIG

1966, Stefan Terzibaschitch

4 "Asko" Class

Dimensions: Guns: Machinery:

74 tons
78 ½ × 21 × 5 feet
1—20 mm.
Diesel. 1 shaft. B.H.P.; 350=11 kts.

Of wooden construction, All launched in 1941. These remaining four boats are used by the Maritime Home Guard. Sister boats Baage, Y 387 (ex-M 561, ex-MS 3), Hjorts Y 389 (ex-M 564, ex-MS 7) and Lys, Y 390 (ex-M 565, ex-MS 8) were officially deleted from the list in 1966.

3 "Alholm" Class

ALHOLM Y 369 (ex-MSK 1)

BIRKHOLM Y 370 (ex-MSK 2) ERTHOLM Y 371 (ex-MSK 3)

Displacement: Dimensions: Guns

70 tons $69 \times 17 \times 9$ feet 1-20 mm. AA. Diesel. B.H.P.: 120=10 kts. Machinery:

Construction

Built by Frederikssund Vaerft. All launched in 1945. Used as patrol vessel. 3 "Fyrholm" Class

FYRHOLM Y 372 (ex-MSK 4)

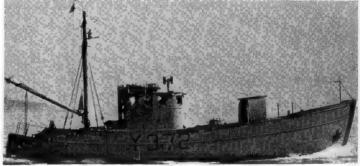
GRÆSHOLM Y 373 (ex-MSK 5) LINDHOLM Y 374 (ex-MSK 6) 68 tons

Displacement: Dimensions: Machinery:

653×163×71 feet Diesel, B.H.P.: 120=9 kts.

Construction

Built by Sydhavns Vaerft. All launched in 1944-45. Used as patrol vessels.



FYRHOLM

1966, Royal Danish Navy, Official

VEJDYB M 570 (ex-ML 3)

2 "Klørdyb" Class

KLØRDYB M 569 (ex-ML 2)

Displacement: Dimensions: Machinery:

 $50\times13\frac{1}{4}\times3\frac{1}{4}$ feet Speed=9 kts.

21 tons

Construction

All launched in 1944. Officially classed as shallow water minesweepers, Graadyb was condemned on 4 Feb. 1956. For other disposals see 1963-64 edition.

PATROL CRAFT (Orlogskuttere)

2 "Maagen" Class MAAGEN (Y 384)

MALLEMUKKEN (Y 385)

Displacement: Dimensions: Guns: Machinery:

190 tons 88½ × 21½ × 9½ feet 1—40 mm. AA. H.P.: 385. 1 shaft. Speed 11 kts.

Construction
Of steel construction. Built at Helsingor, laid down 15 Jan. 1960, launched 1960.

2 "Skarven" Class
TEISTEN (Y 383)

SKARVEN (Y 382) Displacement: Dimensions: Guns:

130 tons 82 × 20 1 × 91 feet 1—37 mm.

Alfa Diesel. B.H.P.: 180=9 kts.

Machinery: Construction
Of wooden construction. Of wooden construction. Built by Lillecevaerft, Korsor, and Holbaek Skibsbyggeri respectively. Launched 1951. All four for service in Greenland waters.

SURVEYING VESSEL (Opmaalingsskib)

FREJA

Displacement: Dimensions: Guns: Machinery: **Boilers:**

Oil fuel:

 $124\frac{1}{2}$ (pp.), 134 (o.g.) $\times 25\frac{1}{2} \times 7\frac{1}{4}$ feet 2—20 mm, AA. (Not mounted on Survey Service) Triple expansion. 1 shaft. I.H.P.: 300=10.5 kts.

1 cylindrical 15 tons Complement:

General Built at Royal Dockyard, Copenhagen, Launched on 22 Dec. 1938. Pennant No. 541. The survey vessel Hejmdal, A 542, was stricken from the Navy List in 1960.



FREJA

1966, Royal Danish Navy, Official

LANDING CRAFT

10 Ex-U.S. LCU Type

BALDER (ex-U.S. LCU 715) A 543 BRAGE (ex-U.S. LCU 810) A 544 HERMOD(ex-U.S. LCU 1042) A 545 LOKE (ex-U.S. LCU 1294) A 546 ODIN (ex-U.S. LCU 649) A 561 THOR (ex-U.S. LCU 765) A 562 TYR (ex-U.S. LCU 1230) A 564 ULLER (ex-U.S. LCU 1373) A 565 VALE (ex-U.S. LCU 1383) A 566 VIDAR (ex-U.S. LCU 1422) A 567

Displacement: Dimensions: Guns: Machinery:

150 tons light (315 tons full load) 105 (w.l.), 115\(\frac{1}{2}\) (o.a.) \times 32\(\frac{2}{3}\times 5\(\frac{1}{2}\) (max.) feet 2—20 mm. AA.

Gray Marine diesels. 3 shafts. B.H.P.: 675=10 kts.

Landing Craft Utility transferred to the Royal Danish Navy from the U.S.A., Odin and Thor on 10 Jan., 1962, Tyr, Uller, Vale and Vidor in Jan. 1963, and Balder, Brage, Hermod and Loke on 1 May 1963.



ODIN

1962, Royal Danish Navy, Official

ICEBREAKERS

DANBJØRN

Displacement: Dimensions:

3,685 tons 252×56×20 feet

Diesels. Electric drive. B.H.P.; 11,880=14 kts.

Machinery: Complement:

Built in 1965. Another new icebreaker of similar type is under construction.

ELBJØRN

Displacement: Dimensions: Machinery:

893 tons standard (1,400 tons full load) $156\frac{1}{2}\times40\frac{1}{2}\times14\frac{1}{2}$ feet Diesels. Electric drive. B,H.P.: 3,600=12 kts.

Built in 1953, A photograph appears in the 1956-57 to 1960-61 editions.

STOREBJØRN

Displacement: Dimensions:

2.540 tons

197×491×19 feet

Built in 1931, Icebreakers are controlled by the Ministry of Trade and Shipping.

LILLEBJØRN

Displacement: Dimensions:

1,000 tons $144\frac{1}{3}\times36\frac{1}{2}\times18$ feet

General Built in 1926. The small icebreaker Mjolner was stricken from the list in 1960.

ISBIØRN

1,675 tons $170\frac{2}{3}\times40\times22\frac{1}{3}$ feet

Displacement: Dimensions:

Built in 1923. This vessel has two funnels, All the other icebreakers have only one.

DEPOT AND

HJ/ELPEREN (ex-U.S., LSM 500)

1.030 tons standard (1.170 tons full load) 203\; (o.a.) \times 34\;\xi\xi\} feet 2—40 mm. Displacement:

Dimensions:

Guns: 2-40 mm. Diesels, 2 shafts, B.H.P.; 2,800=12 kts. Machinery: Complement:

Construction

Former United States medium landing ship. Built by Brown Shipbuilding Co., Houston, Texas. Laid down on 17 Mar. 1945. Launched on 7 Apr. 1945. Completed on 17 May 1945. Transferred to the Royal Danish Navy on 15 May 1953. Depot and Repair ship for motor torpedo boats. Pennant No.: A 563.



HJÆLPEREN

1964, Stefan Terzibaschitsch

ÆGIR (ex-Tanga)

Displacement: Dimensions: Guns: Machinery: Complement:

2,620 tons full load 299 (3113 o.a.)×44½×13½ feet 4—4 inch, 6—40 mm. AA. 2 M.A.N. diesels. B.H.P.: 4,100=17.5 kts.

Construction

Former German depot ship. Built by Neptun Werft, Rostock. Launched in 1938. Purchased and rebuilt with new lattice mast, and new anti-aircraft armament. Reconstruction was completed in June 1951. Pennant No. A 560.



ÆGIR

1966, Royal Danish Navy, Official

HENRIK GERNER (ex-M/S Hammershus)

Displacement: Dimensions:

2.200 tons standard 2.523×40×181 feet 6—40 mm. AA. Burmeister & Wain diesel. Speed=15 kts. Guns: Machinery:

Complement:

General
Former Danish passenger ship. Built in 1936. Transferred to the Royal Danish
Navy on 8 Jan. 1964, refitted at the Royal Dockyard, Copenhagen, and commissioned
as a depot ship for submarines. Pennant No. A 542.



HENRIK GERNER

1966, Royal Danish Navy, Official

OILERS

(Tankfartojer)

RIMFAXE (ex-U.S. YO 226) A 568

SKINFAXE (ex-U.S. YO 229) A 569

422 tons light (1,390 tons full load) 174 (o.a.)×32×13½ feet 1 G.M. diesel. B.H.P.: 560=10 kts. Displacement: Dimensions: Machinery: Complement:

nerun Yard oilers transferred to the Royal Danish Navy from the U.S.A. on 2 Aug. 1962. A photograph of *Rimfaxe* appears in the 1963-64 and 1964-65 editions.



SKINFAXE

1966, Royal Danish Navy, Official

TENDERS

HOLL/ENDERDYBET (ex-Den Lille Havfrue)

KONGEDYBET (ex-Kirsten Pill)

Displacement: Dimensions: General Machinery:

158 tons full load (88 tons gross) $150\times19\times7_{\frac{1}{4}}$ feet

Diesel

Both launched in 1935, Used for transport, Nos. A 554, A 555, respectively,

DOMINICAN REPUBLIC

Administration

Under Secretary For The Navy: Captain Sergio de Jesus Diaz Toribio.

DUATRE (ex-Trujillo. ex-H.M.S. Hotspur)

Chief of Naval Staff:

Commodore Francisco Rivera Caminero.

Vice-Chief of Naval Staff: Captain Ramon Emilio Jimenez Hijo.

Personnel

1966: 4,000 officers and men

Naval Attaché in Washington: Commodore Federico Betances Pierret,

Assistant Naval Attaché in Washington: Captain Rene A. Messina

DESTROYERS (Destructores)

I Ex-British "Hero" Class

1,340 tons standard (2,020 tons Displacement: full load)

312 (pp.), 320 (w.l.), 323 (o.a.)×33×8½ feet (mean) 3—47 inch, 6—20 mm. AA. Dimensions:

Tubes: A/S weapons:

4 D.C.T. Parsons geared turbines. 2 shafts. S.H.P.: 34,000=36 kts. (31 kts. sea speed) 3 Admiralty 3-drum type 455 tons. Machinery:

Boilers: Oil fuel: 455 tons 5,700 miles at 15 kts. 145

Radius: Complement:

Former British destroyer of the "H" flotilla which served in the Royal Navy until Nov. 1948 when she was purchased from Great Britain and renamed Trujillo. Renamed Duarte in 1962.

Pennant No.

Builders Scotts' S.B & Eng. Co. Ltd., Greenock

Laid down 27 Feb. 1935

Launched 23 Mar. 1936

Completed 29 Dec. 1936



DUARTE

Added 1966

SANCHEZ (ex-Generalisimo, ex-H.M.S. Fame)

I Ex-British "Fearless" Class

1,350 tons standard (2,060 tons Displacement:

Dimensions:

1,350 tons seed of full load)
318¼ (pp.), 326 (w.l.), 329
(o.a.)×33½×8½ feet (mean)
3—47 inch, 6—20 mm. AA.

4—21 inch 4 D.C.T. Tubes: A/S weapons:

Gune:

Parsons geared turbines. S.H.P.: 36,000=36 kts. (31 kts. sea Machinery:

speed)
3 Admiralty 3-drum type
480 tons
6,000 miles at 15 kts. Boilers: Oil fuel: Radius:

Complement:

Former British destroyer of the "F" flotilla which served in the Royal Navy until Feb. 1949 when she was transferred from Great Britain and renamed General-Isimo. Renamed Sanchez in 1962.

Pennant No. 102

Builders Vickers-Armstrongs, Barrow Laid down 5 July 1933

Launched 28 June 1934

Completed 26 Apr. 1935



SANCHEZ

1961, Official

CAP. GENERAL PEDRO SANTANA (ex-Presidente Peynado, ex-U.S.S. Pueblo, PF 13) GREGORIO LUPERON

(ex-Presidente Troncoso, ex-U.S.S. Knoxville, PF 64)

2 Ex-U.S. "River" Type

1,430 tons standard (2,415 tons Displacement:

Dimensions:

Guns:

1,430 tons standard (2,415 tons full load)
304 (o.a.)×37½×12 (mean),
13⅔ (max.) feet
3—3 inch; 4—40 mm. AA. (two twin); 6—20 mm. AA.; 4—0·5 inch M.G. (two twin)
Triple expansion. 2 shafts.
1,H.P.: 5,500=19 kts.
2, of 3-drum type
760 tons
140

Machinery Boilers:

Oil fuel: Complement: 140

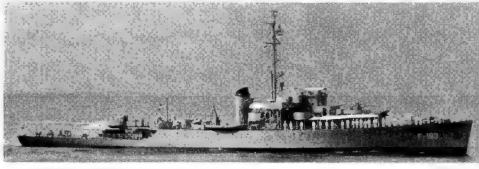
Former United States "Tacoma" class frigates. Transferred to Dominican Navy in 1949. Renamed in 1962. The frigate Juan Pablo Duarte (ex-Natchez, ex-H.M.S. Annan) was lost

FRIGATES (Fragatas)

Pennant No. Builders Leatham D. Smith S.B. Co., Wis. Kaiser S.Y. Richmond, Cal. F 103 F 104

Laid down 15 Apr. 1943 14 Nov. 1943

Launched 10 July 1943 20 Jan. 1944 Completed 29 Apr. 1944 27 May 1944



GREGORIO LUPERON

Official

I Ex-Canadian "River" Type

MELLA (ex-Presidente Trujillo, ex-H.M.C.S. Cariplace)

Pennant No.: Builders: Launched:

F 451 Davie S.B. and Repairing Co., Lauzon 6 luly 1944 13 Dec. 1944

Completed: Displacement: 1,400 tons standard (2,125 tons

1,400 tons standard (2,125 tons full load) 301½×36½×12 (mean) feet 1—4 inch, 2—47 mm., 1—40 mm. AA. as frigate (no longer mounted) Dimensions:

Machinery:

mounted)
Triple expansion. 2 shafts.
1.H.P.: 5,500=20 kts.
2, of 3-drum type
645 tons
195 (15 officers, 130 men, 50 midshipmen) Boilers: Complement:

General General
Transferred to the Dominican Navy in 1946. Original
Dominican frigate, Modified for use as Presidential Yacht
with extra accommodation and deck-houses built up aft,
Pennant No, as a frigate was F 101, but as the Presidential Yacht she no longer wears it. Renamed Mella in
1962. Also used for training midshipmen.



1958, Official

CRISTOBAL COLON (ex-H.M.C.S. Lachute) GERARDO JANSEN (ex-H.M.C.S. Peterborough) JUAN ALEJANDRO ACOSTA (ex-H.M.C.S. Louisbourg) JUAN BAUTISTA CAMBIASO (ex-H.M.C.S. Belleville) JUAN BAUTISTA MAGGIOLO (ex-H.M.C.S. Riviere du loup)

5 Ex-Canadian "Flower" Type

1,060 tons standard (1,350 tons

Dimensions:

1,000 tons standard (1,330 tons full load)
193 (pp.), 208 (o.a.)×33×13½ (mean) feet
Colon: 1—3 inch; 2—40 mm.
AA. (twin); 6—20 mm. AA.;
4—0.5 M.G. (two twin) Other
Four: 1—4 inch; 1—40 mm.
AA.: 6—20 mm. AA.: 2—0.5 Guns:

4—0.5 M.G. (two twin) C Four: 1—4 inch; 1—40 AA.; 6—20 mm, AA.; 2-M.G. Triple expansion, I.H.P. 2,750

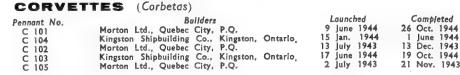
Machinery =16 kts. of 3-drum type

282 tons Oil fuel:

Complement: 53

General
All built in Canadian shippards under the emergency
Construction programme during the Second World War.
Transferred to the Dominican Navy in 1947. The sixth
ship, Asbestos, was wrecked en route from Canada. Photographs

rnotographs
A photograph of Juan Bautista Maggiolo appears in
the 1951-52 to 1957-58 editions, of Cristobal Colon
in the 1951-52 to 1960-61 editions, and of Gerardo
Jansen in the 1961-62 to 1965-66 editions.





JUAN BAUTISTA CAMBIASO

PATROL VESSELS (Patrulleros)

Ex-U.S.S. SIGNET, MSF 302

Ex-U.S.S. SKIRMISH, MSF 303

Displacement: 650 tons standard (945 tons full load)
Dimensions: 180 (w.l.), 184\{ (o.a.)\times33\times10 \text{ feet}
Guns: 1—3 inch d.p., 4—40 mm. AA.
Machinery: Diesel. 2 shafts. B.H.P.: 1,710=15 kts.

Former U.S. fleet minesweepers of the "Admirable" class. Purchased on 13

lan. 1965.

2 Ex-U.S. PC Type

Pennant No.: 1 Launched 27 Oct. 42 11 July 42 27 DE FEBRERO (ex-U.S.S. PC 613)
CONSTITUCION (ex-Cibas, ex-Engage, ex-U.S.S. PC 1597) P 103

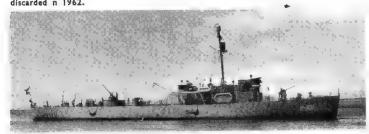
Displacement:

Dimensions:

280 tons standard (450 tons full load)
170 (w.l.), 173\frac{3}{23\times 7} feet
1—3 inch, 50 cal., 1—40 mm, AA., 1—20 mm. AA.
Diesels. 2 shafts. B.H.P.: 3.750=22 kts. Guns: Machinery: Complement:

General Ex-United States patrol vessels (submarine chasers). Launch dates above. Built by Gibbs Gas Engine Co., Jacksonville, Fla.; and Dravo Corp., Neville Island, Pa., respectively, laid down on 7 July 1942, and 26 Feb. 1942, completed on 2 June 1943, and 22 Oct. 1942. Pennant Nos. P 101 and 103, respectively. Renamed in General

Sister ship Patria, P 102 (ex-Capitán Wencesias Arvels, ex-U.S.S. PC 1202) was discarded n 1962.



27 DE FEBRERO

Official

3 Ex-U.S.C.G. WPC Type

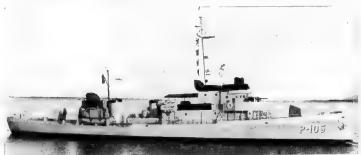
		Pennant No.:	Launched
INDEPENDENCIA (ex-U.S.C.G.C. Icarus)		P 105	1931
LIBERTAD (ex-Rafael Atoa, ex-U.S.C.G.C.	Thetis)	P 106	1931
PESTALIBACION (ex-U.S.C.G.C. Galathea)	,	P 104	1932

Displacement: Dimensions:

Guns:

Machinery: Complement: 334-337 tons 165×25½×9½ feet 1—3 inch, 1—40 mm., 1—20 mm. 2 Diesels, B.H.P.: 1,280=15 kts. 35 (Independencia, 4 officers, 25 men)

Ex-United States Coastguard Cutters, Independencia was completed by Bath Iron Works in 1932, and Restauracion by John H. Machis & Co., Camden, N.J., in 1933.



INDEPENDENCIA

1964, Dominican Navy, Official

MEDIUM LANDING SHIP (Barcazas de Desembarco)

I Ex-U.S. LSM Type. Rated as Auxiliary (Buque Auxiliar) SIRIO (ex-U.S.S. LSM 483)

Dimensions: Machinery:

734 tons standard (1,100 tons full load)
196 (w.l.), 203½ (o.a.)×34×10 (mean) feet
2 General Motors diesels. 2 shafts. B.H.P.: 1,800=14

kts. 164 tons Complement: 30

General

Ex-United States LSM. (Medium Landing Ship.) Built by Brown Shipbuilding Co., Houston, Texas. Laid down on 17 Feb. 1945, launched on 10 Mar. 1945 and completed on 13 Apr. 1945. Transferred to the Dominican Navy in 1960. Pennant No.

Disposals

Disposals

The landing ship San Rafael, BA-103 (ex-U.S.S. LSM 216) was discarded from the Service in 1960. Antares, BA 105 (ex-U.S.S. LSM 538) was sold in 1959.

The landing craft Paraiso, BDI-103 (ex-Quetral, ex-Fantasma, ex-U.S.S. LCIL 1006), transferred from the Dominican Republic Mercantile Marine in 1952, was discarded from the Service in 1960, it was officially stated. BDI 101 and BDI 102 were removed from the effective list in 1957.



SIRIO

1964, Dominican Navy, Official

SAMANA LA 2

UTILITY LANDING CRAFT (Barcazas de Desembarco)

2 LCT Type. Rated as Auxiliary Landing Craft

(Lanchas Auxiliares)

ENRIQUILLO (ex-17 de Julio) LA 3

150 tons standard (310 tons full load) 105 (w.l.), 119½ (o.a.)×36×3 (mean) feet 1 AA., 50 cal. 3 General Motors diesels. B.H.P.; 441=8 kts. 80 tons Displacement: Dimensions: Guns:

Machinery: Oil fuel:

Complement:

Both built by Astilleros Navales Dominicanos in 1957-58. The new Samana, LA 2, placed the Samana LA 2 lost in bad weather. Enriquilla (ex-17 de julio) was unched on 24 Oct. 1957. Renamed in 1962. Disposals

Disposals

The ex-United States Tank Landing Craft of the LCT (6) type, 17 de Julio and Maria Josefina, Penmant Nos. LA 3 and LA 4, respectively, were withdrawn from service in 1956, but two landing craft of the same specifications were built.



ENRIQUILLO

1964, Dominican Navy, Official

COAST GUARD VESSELS (Guardacostas)

DE MARZO (ex-Mella, ex-Rosa, ex-SC 1351, 11 March 1943) S CARRERAS (ex-Sanchez, ex-Patria, ex SC 1153, June 1943)

85 tons standard (130 tons full load) 107½ (w.l.), 111 (o.a.)×17×6½ feet Diesel. 2 shafts, B.H.P.: 4,000=19·5 kts. Displacement: Dimensions: Machinery: tons

Complement:

General

Built by the Vineyard Boat Building Co., Milford, Del. Launch dates above. Of wooden construction. Pennant Nos. GC 101 and GC 102, respectively. Renamed Sanchez and Mella in 1957. Renamed in 1962.



30 DE MARZO

Official

PGM 83

New Construction
Scheduled in 1964 to be built in the U.S.A. for transfer to the Dominican Republic under the Military Aid Programme.

LAS CALDERAS (ex-Luberon)

BAHIA OCOA (ex-22 de Junio)

Displacement: Dimensions: Guns:

47 tons standard $83\times16\frac{1}{2}\times4\frac{1}{2}$ feet 2—20 mm., 2 M.G., 8 D.C. Diesel, B.H.P.: 1,200=23.5 kts.

Built by Wheeler Shipyards, Brooklyn, Launched in 1943. Hulls are of wood. Ex-U.S.C.G. cutters 56197 and 56198, respectively. Pennant Nos. GC 9 and GC 10, respectively: Named in 1957, GC 3, GC 4, GC 5, GC 6 and GC 7 were discarded in 1957. Renamed in 1962.



BAHIA OCOA

1966. Official

Disposals

Sister boat Bahla Manzanillo, GC 11 ex-16 de Agosto, ex-U.S.C.G. cutter 56199)

coastguard vessel Trinidad, GC 8, was also discarded in 1962, and Boya, GC-2,

The training ship Duarte (ex-Nueva Tioditie), GA 1, was discarded in 1962.

LIGHTHOUSE AND BUOY TENDER

(Buque de Faros y Boyas-Boyero)

CAPOTILLO (ex-Camillia)

Displacement: Dimensions:

337 tons 117×24×73 Machinery: Diesels, B.H.P.; 880=10 kts.

Complement:

Built in the United States in 1911. Acquired from the United States Coast Guard in 1949, Pennant No. FB 101. A photograph of this ship appears in the 1957-58 edition.

MOTOR LAUNCH (Lancha Auxiliare)

MAIMON

Dimensions: Machinery:

53×9×4 feet 2 motors. H.P.: 500=14 kts.

Complement:

Acquired for the Hydrographic Service of the Navy in 1960, Pennant No.: LA-5.

Disposals launch Altogracia, LA-1 (ex-Laura) was discarded in 1960, and Najaya, The motor lat LA 4, in 1962.

RESCUE LAUNCHES (Lanchas de Rescate)

CAPITAN ALSINA

CAPITAN MADURO

Displacement: Dimensions:

100 tons standard

tons standard 92 (w.l.), $104\frac{1}{4}$ (o.a.) $\times 19\frac{1}{4}\times 5\frac{1}{4}$ feet 2—20 mm. AA., 2 M.G. Capitan Alsina: Diesel: Capitan Maduro: 2 Packard engines. 2 shafts; H.P.: 1,000=17 kts. 20 Machinery: Complement:

General

Of wooden construction. All launched in 1944. Named as above in 1957. Pennant Nos. R 101 and LR 103. respectively. LR 102 was lost in 1956.



CAPITAN ALSINA

Official

VACHT

PATRIA (ex-Angelita)

General

Four masted yacht with auxiliary engines. Presidential Yacht. Renamed Patria in 1964.

The auxiliary ships (Buques Auxiliares) 18 de Diciembre, BA-101 (ex-U.S. WPC 587), converted patrol vessel, and Leonor, BA-102 (ex-Romanita), were discarded in 1960.

OILERS

(ex-U.S. YO 213)

(ex-U.S. YO 215)

Displacement: Dimensions: Machinery: Capacity:

1,400 tons full load 174×32 feet S.H.P.: 525 6,570 barrels

Former United States self propelled fuel oil barges. Both built by Ira S. Bushey & Sons, Inc., Brooklyn, New York. Loaned by the U.S.A. in Mar. 1964.

ULISES HEUREAUX (ex-24 de Octubre, ex-YO 2)

Displacement:

1,460 tons

Measurement:

Dimensions: Machinery:

602 tons gross
180×30×134 feet
2 Diesels., B.H.P.: 480=8 kts. (loaded speed)
280,000 gallons

Capacity: Complement:

Built in the United States in 1943. Recently used by Government as a commercial carrier. Renamed *Ulises Heureaux* in 1962. Permant No. BT 101. A photograph appears in the 1957-58 edition.

Disposal
The oiler San Carlos, BT 102, was officially deleted from the list in Feb. 1965.

TUGS (Remolcadores)

HERCULES II

70×181×9 feet

Dimensions:

Complement:

1 motor. H.P.: 500. 1,225 r.p.m.

General

Small tugs of new construction, Pennant Nos. R 2 and R 5, respectively,

ISABELA

Displacement: Displacement:
Dimensions:
Machinery: 40 tons 65×14×9 feet 2 Diesel moto

Complement:

Diesel motors. B.H.P.: 300=8 kts.

General
Built in the United States. Named Isabela in 1957. Pennant No. R 1. A photograph appears in the 1951-52 to 1957-58 editions. The tug Hercules (ex-Heracles), Pennant No. R 2, transferred from the Dominican mercantile marine in 1952, was lost in 1956.

MERCEDES

SANTANA

General Small tugs for harbour and coastal use. Pennant Nos. R 10 and R 7 respectively.

Disposals The tu The tugs Bergantin, R-6, Catalina, R-3, Leonidas, R-8 and Luperon, R-4 were discarded in 1960-62.

ECUADOR

Administration

Minister of Defence: General Gonzalo Coba Cabazas.

Commander-in-Chief of the Navy: Rear Admiral Carlos Monteverde Granados. Chief of Naval Staff:

Captain Gonzalo Calderon Noriega.

Naval Attaché in Washington: Captain Francisco Espinosa.

Ships

The names of Ecuadorian naval vessels are prefaced by "B.A.E."

Personnel

1966: 4,000 officers and men

Establishments

Naval Academy: In Salinas

Naval Bases

In Galápagos Guayaquil, Salinas, and San Lorenzo.

FRIGATES

GUAYAS (ex-U.S.S. Covington, PF 56) Pennant No. E 01

Builders Globe S.B. Co. Superior, Wis. Laid down 1 Mar. 1943

Launched 15 July 1943 Completed 3 Aug. 1944

I Ex-U.S. PF Type

Displacement:

1,430 tons standard (2,415 tons

Dimensions: Guns:

1,430 tons standard (2,415 tons full load)
304 (o.a.)×37½×13¾ feet
2—3 inch, 2—40 mm. AA.,
4—20 mm, AA.
3 D.C.T.
Triple expansion. 2 shafts.
1.H.P.: 5,500=18 kts.
2 small tube
290 tons normal, 645 tons max.
7,000 miles at 18 kts.: 9,500 miles at 12 kts.

A/S weapons: Machinery:

Boilers: Oil fuel: Radius:

Complement:

GUAYAS

1963, Ecuadorian Navy, Official

General

Former United States patrol frigate of the PF type. Purchased from the U.S.A. in 1947. Similar in design to British "River" class frigates.

PRESIDENTE ALFARO (ex-H.M.S. Quantock)

PRESIDENTE VALASCO IBARRA (ex-H.M.S. Meynell)

2 Ex-British "Hunt" Class (Type I)

Escort Destroyers

Displacement:

1,000 tons standard (1,490 tons

Dimensions:

full load) $272\frac{1}{3}$ (pp.), 280 (c.a.) $\times 29 \times 14$

feet 4—4 inch AA., 4—2 pdr.,

A/S weapons: Machinery:

4—4 inch AA., 4—2 pdr., 2—20 mm. AA.
D.C.T., D.C. racks
Parsons geared turbines (by Wallsend Slipway in Presidente Velasco Ibarra). 2 shafts. S.H.P.: 19,000=25 kts. (max.)
2 Admiralty 3-drum type 280 tons 2,000 miles at 12 kts., 800 miles at 25 kts.

Boilers: Oil fuel: Radius:

Complement:

Pennant No. D 01

D 02

Builders
Scotts' Shipbuilding
& Eng. Co. Ltd.,
Greenock
Swan Hunter &

Wigham Richard-son, Ltd., Walls-end-on-Tyne,

Laid down 26 July 1939

10 Aug. 1939

Launched 22 Apr. 1940 7 June 1940 Completed 6 Feb. 1941

30 Dec. 1940



PRESIDENTE VELASCO IBARRA

1965, Ecuadorian Navy, Official



PRESIDENTE ALFARO

1963, Ecuadorian Navy, Official

General

General
Former British frigates (ex-escort destroyers) of the
"Hunt" Class, Type I, purchased by Ecuador from
Great Britain in 1955, and refitted by J. Samuel White
& Co., Ltd., Cowes, Isle of Wight. Quantock was taken
over by the Ecuadorian Navy from the Royal Navy in
Portsmouth Dockyard on 16 Aug. 1955, when she was
renamed Presidente Alfaro. Sister ship Meynell was
transferred to the Ecuadorian Navy later and renamed
Presidente Velasco Ibarra.

ESCORT PATROL VESSELS

2 Ex-U.S. PCE Type Escort Patrol Vessels

ESMERALDAS MANABI Name: (ex-U.S.S. Eunice, PCE 846) (ex-U.S.S. Pascagoula, PCE 874) Pennant No.: EO 3 EO 2 FO 3
Pullman Standard Car Manufacturing
Co., Chicago, III.
10 Aug. 1943
20 Dec. 1943
4 Mar. 1944
29 Nov. 1960 Albina Eng. & Mach. Works, Portland, Oreg. 1 Mar. 1943 11 May 1943 31 Dec. 1943 Laid down: Launched: Completed: Transferred: 5 Dec.

640 tons standard (903 tons full load)
180 (w.f.), 184½ (o.a.)×33×9½ feet
1—3 inch dual purpose, 6—40 mm. AA,
4 D.C.T.
G.M. diesels. 2 shafts. B.H.P.: 1,800=15·4 kts.
100 officers and men Displacement: Dimensions: Guns: A/S weapons: Machinery: Complement:

Built in the U.S.A. as above. Former United States patrol vessels (180 ft. Escorts) transferred from the U.S. Navy to the Ecuadorian Navy in 1960.

A photograph of Manabi, EO 2, appears in the 1963-64 and 1964-65 editions.

Disposals

Disposals

The patrol vessel (guardacosta) Manabl (ex-Diez de Agosto, ex-U.S.S.Opal, ex-Coronet) ex-yacht PYc8, acquired from the United States Navy in Sep. 1943, was officially deleted from the list in 1960.

The patrol vessel (ex-yacht) Esmeraldas was sunk at Guayaquil in Guyas River 1 Sep. 1953.

The training ship Presidente Alfaro (ex-Ara) was discarded in 1956.



ESMERALDAS

1965, Ecudorian Navy, Official

PATROL BOATS

2 Ex-U.S.C.G. PGM Type

GUAYAQUIL (ex-U.S. PGM 76)

QUITO (ex-U.S. PGM 75)

Displacement:

101 tons 95 (o.g.)×19×5 feet

Dimensions:

Armament: Machinery:

Radius:

Complement:

Former U.S. Coast Guard cutters, Transferred to the Ecuadorian Navy under the Mutual Defence Assistance Programme in 1965.

6 German Type

LSP 4 LSP 6 LSP 1 LSP 2 LSP 3 LSP 5

Displacement: Dimensions:

45 tons standard (64 tons full load) $76\frac{1}{4} \times 13\frac{1}{4} \times 4\frac{1}{4}$ (mean), $6\frac{1}{3}$ (max.) feet AA and ASW weapons Bohn & Kähler diesel. 2 shafts. B.H.P.: 1,200=22 kts. 50 miles at 16 kts.

Guns: Machinery:

Radius:

Complement:

Construction
Built by Hermann Havighorst, Bremen-Blumenthal. Ordered in 1954. First two
were delivered August 1954 and the remainder in 1955. A photograph of LP 1 were delivered August 1954 and appears in the 1955-56 editions. Disposals

The patrol boats LP 7 to LP 12 were officially deleted from the list in 1960.



LP 6

1963, Ecuadorian Navy Official

Although not on the Navy List of Ecuador the hulls of the former U.S. Navy high speed transports (modified destoyer escorts) Reeves APD 52, Frament. APD 77. Crosley APD 87, Hunter Marshall, APD 112, and Walter S. Gorka, APD 114, were transferred from the United States in July and Aug. 1961 for use as floating

power plants.

The auxiliary floating dock ARD 17, now renamed Amazonas, was also transferred on 7 Jam. 1961, and dry dock companion craft YFND 20 was leased on 2 Nov. 1961.

Disposals of Coast Guard Vessels
Of the two coast guard vess

Of the two coast guard vessels, Abdon Calderon (ex-Cotopaxi) was officially deleted from the list in 1961, and Atahualpa in 1962.

The transport El Oro (ex-Cinco de Junio, ex-APc 85) was officially deleted from the list in 1961.

LANDING SHIPS

2 Ex-U.S. LSM Type

JAMBELI (ex-U.S.S. LSM 539) TD 02 TARQUI (ex-U.S.S. LSM 555) TD 01

743 tons beaching (1,095 tons full load)
196½ (w.l.), 203½ (o.a.)×34½×8⅓ feet
2—40 mm. Bofors AA.
Diesels. 2 shafts. B.H.P.; 2,800=12·5 kts. Displacement: Dimensions: Guns: Machinery:

Complement:

General Former United States Medium Landing Ships (LSM), Jambeli was laid down by Brown Shipbuilding Co., Houston, Tex., on 10 May 1945. Tarqui was laid down by the Navy Yard, Charleston, S.C. on 3 Mar. 1945 and launched on 22 Mar. 1945. Purchased from the U.S.A. in 1958 and transferred to the Ecuadorian Navy at Green Cove Springs, Florida. A photograph of Jambeli appears in the 1960-61 to 1963-64



TAROUI

1963, Ecuadorian Navy, Official

SUPPLY SHIPS

CALICUCHIMA (ex-U.S. FS 525)

650 tons light (950 tors full load) 176×32×14 (max.) feet Diesel, 2 shafts. B_vH.P.: 500=11 kts. Displacement: Dimensions: Machinery:

Former United States small cargo ship of the Army FS type. Leased to Ecuador on 8 Apr. 1963. Provides service to the Galapagos Islands. Loss

The oiler Ruminghul, YO 123, foundered in the Carribean on 22 Nov. 1964.

ATAHUALPA (ex-U.S. YW 131)

Displacement:

415 tons light (1.500 tons full load) 174×33 (max.) feet G.M. diesel. 750 r.p.m.=11·5 kts.; 350 r.p.m.=5·3 kts. 2.370 miles at 8 kts. 287,800 gallons Machinery: Radius:

Capacity:

General
Built by Leatham D. Smith Shipbuilding Co., Sturgeon Bay, Wisconsin, U.S.A. in 1945, Formerly United States Navy self-propelled water barge transferred under the Military Aid Programme in Mar. 1963. Acquired by the Ecuadoriam Navy on 2 May 1963. Pennant No. AO-1.

SURVEY SHIP
ORION (ex-U.S.S. Mulberry, AN 27)

Displacement:

560 tons standard (805 tons full load)
146 (w.l.), 163 (o.a.),×30½×11½ (max.) feet
1—3 inch AA.
Diesel-electric_ B.H.P.: 800=13 kts. Dimensions: Guns:

Machinery: General

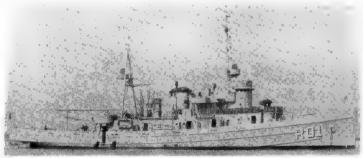
Built by Commercial Iron Works, Portland, Oregan, Launched on 26 Mar. 1941,

TUGS

CAYAMBE (ex-Los Rios, ex-U.S.S.. Cusabo, ATF 155)

1,235 tons standard (1,675 tons full load)
195 (w.l.), 205 (o.a.)×38½×15½ (max.) feet
1—3 inch, 4—40 mm. AA., 2—20 mm. AA.
4 diesels with electric drive. B.H.P.: 3,000=16·5 kts. Displacement: Dimensions: Guns: Machinery: 85

Formerly a fleet ocean tug of the "Apache" class in the U.S. Navy. Launched on 26 Feb. 1945. Fitted with powerful pumps and other salvage equipment. Transferred to Ecuador by the United States for flve years (subsequently extended) lease on 2 Nov. 1960 and renamed Los Rios. Again renamed Cayambe in 1966.



CAYAMBE (ex-Los Rios)

1966, Ecuadorian Navy, Official

COTOPAXI (ex-R. T. Ellis)

Displacement: Machinery:

150 tons

82×21×8 feet
Diesel. 1 shaft, B.H.P.; 650=9 kts.

General
Former American tug, Built by Equitable Building Co. Incorp. Purchased from the United States in 1947. Photograph in the 1956-57 to 1959-60 editions.

SANGAY (ex-Loja) 295 tons light (390 tons full load) Fairbanks Morse diesel: Speed=12

Machinery: General Built in 1952. Acquired by the Ecuadorian Navy in 1964. Renamed in 1966.

EGYPT

Administration

Personnel

Mercantile Marine

Commander-in-Chief and Chief of Staff of the Navy: 1966: 11,000 officers and men, including coast Rear Admiral Soliman Izzat

guards.

Lloyd's Register of Shipping: 118 vessels of 232,463 tons gross

8 Ex-U.S.S.R. "W" Type

Displacement:

1,030 tons surface, 1,180 tons

Dimensions:

Guns: Tubes:

1,030 tons surface, 1,100 tons submerged
240 (o.a.)×22×15 feet
4—25 mm. AA.
6—21 inch (4 forward, 2 aft)
Diesels. B.H.P.: 4,000=17 kts.
surface: Electric motors.
H.P.: 2,500=15 kts. submerged

Machinery:

Radius: 13,000 miles Complement:

60

The first units were transferred from the Soviet Navy to the Egyptian Navy in June 1957. Three more arrived at Alexandria on 24 Ian. 1958. Another was transferred by the U.S.S.R. to Egypt at Alexandria in Jan. 1962.

SUBMARINES



"W" Type

Sergel Romanov

I Ex-U.S.S.R. "MV" Type

Displacement:

350 tons surface, 420 tons

Dimensions:

submerged $167\frac{1}{2}\times16\times12$ feet 1-45 mm, AA., 1 M.G. 2-21 inch

Tubes:

Machinery:

Radius: Complement: Diesels. B.H.P.: 1,000=13 kts.

surface. Electric motors. H.P.: 800=10

kts. submerged 4,000 miles at 8 kts.

Launched in 1950. Transferred from the U.S.S.R. to Egypt in June 1957.

New Construction

On 30 Aug. 1963 the Commander-in-Chief said that experiments in the first submarine to be built in Egypt had been successfully completed.

DESTROYERS

4+2 Ex-U.S.S.R. "Skoryi" Type

AL NASSER AL AFFER

DAMIETTE

Displacement:

2,600 tons standard (3,500 tons full load)

Dimensions:

393½ (pp.), 420 (o.a.)×41× 13½ feet 4—51 inch; 2—3 inch AA.; 7—

Guns:

37 mm. AA. 10—21 inch (quintupled)

Tubes: A/S weapons; Mines:

4 D.C.T.

80 Geared turbines. 2 shafts, S.H.P.:

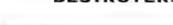
Machinery: 70,000=38 kts.

Boilers: Radius:

4,000 miles at 15 kts.

250 Complement:

General
Former "Skoryi" class destroyers in the Soviet Navy.
Launched in 1951. Al Nasser and Al Zaffer were delivered to the Egyptian Navy on 11 June 1956 at
Alexandria. The implication of each name in Arabic is
"victory".





SKORYI Type

Added 1966

It was reported in Dec. 1959 that six destroyers had been or were being transferred from the U.S.S.R. to Egypt. Two were delivered at Alexandria in Jan. 1962.

Cruisers It was reported in 1961 that Egypt was expecting to purchase two cruisers in the near future.

2 Ex-British "Z" Type

EL FATEH (ex-Zenith)

EL QAHER (ex-Myngs)

Name:

El Fateh

El Qaher

Laid down: Completed:

Wm. Denny & Bros. Ltd., Dumbarton 19 May 1942 5 June 1944 22 Dec. 1944 Ltd., Du 19 May 5 June 22 Dec.

Vickers-Armstrongs Ltd., Tyne 27 May 1942 31 May 1943 23 June 1944

Displacement:

1,730 tons standard (2,575 tons

Guns:

full load)
326½×35½×16 (max.) feet
4—4.5 inch d.p.; 6—40 mm. Dimensions: AA. 4 D.C.T. 8—21 inch

Tubes: A/S weapons: Mines: Machinery:

Parsons geared turbines. S.H.P.: 40,000=36-75 kts. (designed), sea spead 31:25 kts. 2 Admiralty 3-drum type 580 tens.

Radius:

580 tons 2,800 miles at 20 kts. 250 Boilers: Complement:

General Former "Z" class destroyers in the British Navy. Purchased from Great Britain in 1955. Before being taken over by Egypt El Quher was refitted by J. Samuel White & Co. Ltd., Cowes, Isle of Wight, and El Fateh refitted by John I. Thornycroft & Co. Ltd., Woolston, Southampton in July 1956.

Both ships were refitted and modernised by J. Samuel White & Co. Ltd., at Cowes, Isle of Wight from May 1963 until July 1964.



EL OAHER

1965, courtesy J. Samuel White & Co. Ltd., Cowes



EL FATEH

1966

FRIGATES

I Ex-British "Black Swan" Type

1,490 tons standard (1,925 tons full load) $299\frac{1}{2}\times38\frac{1}{2}\times8\frac{3}{4}$ feet (11 max.) Displacement:

Dimensions: Guns: -40 mm., 2---20

6—4 inch. 4-mm, AA. 4 D.C.T. A/S weapons:

Geared turbines. 2 shafts S.T.P.; 4,300=19.75 kts. (designed). sea spead 18 kts. 2, of 3-drum type Machinery:

Boilers:

370 70 tons .500 miles at 12 kts. Oil fuel: Radius:

Complement: General

Former "Black Swan" class sloops (later re-rated as frigates) in the British Navy. Transferred from Great Britain in Nov. 1949. As a flotilla leader she had a broad band painted on the funnel and a thirmer flotilla





TARIK

Added 1966

I Ex-British "River" Type

1,490 tons standard (2,216 tons Displacement: Dimensions:

full load)
283 (pp.), 301½ (o.o.)×36½×
14 feet
1—4 inch, 2—40 mm, AA., 6—
20 mm, AA.
4 D.C.T.

A/S weapons:

Machinery:

4 D.C.T.
Triple expansion. 2 shafts. 1.H.P.:
5,500=18 kts.
2 Admiralty 3-drum type
640 tons
9,500 miles at 12 kts.
140 Boilers: Oil fuel: Radius:

Complement:

General
Former "River" class frigates in the British Navy.
Purchased from Great Britain in Nov. 1948. Refitted by
Willoughby (Plymouth), Ltd, Sailed for Egypt in Apr.
1950. Formerly mounted two four-inch guns.
Class
Of her two sister ships Ablkir (ex-H.M.S. Usk) was
sunk as a blockship in the Suez Canal in Nov. 1956
(raised and dumped in Apr. 1957); and Domiat (exH.M.S. Nith) was sunk by the British cruiser Newfoundland off Suez on 1 Nov. 1956.

RASHEED (ex-Spey)

Pennant No.

Laid down Builders Launched Completed Smith's Dock Co. Ltd., Middlesbrough 18 July 1941 10 Dec. 1941 19 May 1942



RASHEED

Added 1966

I Ex-British "Hunt" Type

MOHAMED ALI (ex-Ibrahim el Awal, ex-Cottesmore)

Builders Pennant No.

Completed Launched Laid down 12 Dec. 1939 5 Sep. 1940

Yarrow & Co., Ltd. Scotstoun, Glasgow 29 Dec. 1940

1,000 tons standard (1,490 tons Displacement: full load) 273 (pp.), 280 (o.a.)×29×14 Dimensions: mm. AA., 5—2 pdr. 2 D.C.T. Guns: A/S weapons: 2 D.C.1.
Parsons geared turbines. 2 shafts.
S.H.P.: 19,000=25 kts. (max.)
2, of 3-drum type
280 tons
2,000 miles at 12 kts.
146 Machinery: Boilers: Radius:

Complement:

General
Former British "Hunt" Class, Type 1 escort destroyer (later re-rated as frigate). Served in the British Navy from 1940, Transferred from the British Navy to the Egyptian Navy in July 1950; Sailed for Egypt in April 1951, after a nine morths' refit by J. Samuel White & Co. Ltd., Cowes. She was first renamed Ibrahim el Awai but was renamed Mohamed Ali el Kebir about 1951.



MOHAMED ALI

Added 1966

Sister ship Ibrahim el Awal served in the British Navy as H.M.S. Mendip until 1948, when she was transferred to the Chinese Navy anl renamed Lin Fu; she was Peturned to the British Navy at Hong Kong a year later and reverted to her original name. but was transferred to the Egyptian Navy in Nov. 1949, when she was first

renamed Mohamed All el Kebir but was afterwards again renamed Ibrahim el Awal, exchanging names with her sister ship about 1951-52. Ibrahim el Awal surendered to Israeli forces off Haifa on 31 Oct. 1956; she was rehabilitated and incorporated into the Israeli Navy and renamed Haifa (see later page).

I Ex-British "Flower" Type

Displacement: 1,060 tons standard (1,340 tons

full load)
190 (pp.), 205 (o.a.)×33×14½ Dimensions:

feet (max.)
1—4 inch AA., 1—2 pdr., 2—
20 mm. AA.
Triple expansion. I.H.P.: 2,750 Guns

Machinery:

= 16 kts. 2 S.E. 230 tons Boilers:

Oil fuel: Radius: 7,000 miles at 10 kts.

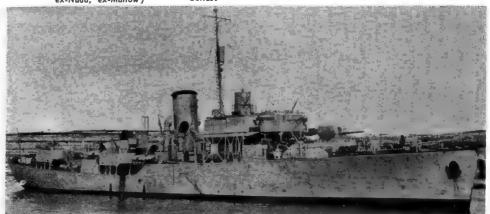
Complement: General

General
Former "Flower" class corvettes (later re-rated as
frigates) in the British Navy, Taken over by Yugoslavia
in 1943 (loaned). Returned to the British Navy early
in 1949 and transferred to Egypt on 28 Oct. 1949.

Sister ship Misr (ex-S.S. Mairouk) was rammed and sunk by collision south of Suez 16th-17th May 1953.

EL SUDAN (ex-Mallow, ex-Partizanka, ex-Nada, ex-Mallow)

ders Laid down Launched Wolff, Ltd., 14 Nov. 1939 22 May 1940 Builders Completed Harland & 2 July 1940 Belfast



EL SUDAN

. A. & J. Pavla

CORVETTES (ex-Fleet Minesweepers)

2 Ex-British "Bangor" Type

Laid down Launched Completed 17 July 1940 10 June 1941 17 Nov. 1941 Builders enry Robb. Henry Robb, 17 July 1940 10 Jure 1941 17 Nov. 1941 Ltd., Leith Lobnitz & Co., Ltd., 2 Apr. 1940 4 Sep. 1940 12 Dec. 1941 MATROUH (ex-Stornoway)
NASR (ex-Bude) Renfrew

Displacement: Dimensions:

672 tons standard (900 tons full load) 180 (o.a.) \times 28 $\frac{1}{2}\times$ 9 $\frac{1}{2}$ feet 1.—4 inch, 1.—3 inch, 2.—40 mm, AA. (4.—20 mm. in Guns: Matrouh)

A/S weapons:

Machinery:

Matrouh)
2 D.C.T.
Triple expansion. 2 shafts. I.H.P.: 2,400=16 kts.
(designed) sea speed 14 kts.
2 Admiralty 3-drum type
170 tons
4,300 miles at 10 kts. Boilers: Oil fuel:

Radius: Complement: 60

Former "Bangor" class fleet minesweepers acquired from Great Britain. Now

ted as corvettes.
Sister ship Sollum sank in heavy weater off Alexandria on 7 Mar. 1953.



MATROUH

Egyptian Navy, Official

FLEET MINESWEEPERS

6 Ex-U.S.S.R. "T 43" Type

HITTINE CHARKIEH GARBIA MINIYA YARMOUK

410 tons standard (530 tons full load) 200×27½×9 feet 4—37 mm. AA. Diesel=18 kts. Displacement:

Dimensions:

General Machinery:

Four reported to have been transferred from the Soviet Navy and delivered to Egypt in 1956, and two others later.

COASTAL MINESWEEPERS

6 Ex-U.S. BYMS Type

ARISH (ex-BYMS 2028) KAISARIA (ex-BYMS 2075) KORDOFAN (ex-BYMS 2212)

MALEK FUAD (ex-BYMS 2035) NAHARIA (ex-BYMS 2069) RAFAH (ex-BYMS 2149)

Displacement: Dimensions:

215 tons standard (270 tons full load)
136 (o.a.)×24½×6 feet
1—3 inch (except Rafar and Tor), 2—20 mm. AA.
Diesel. B.H.P.: 1,000=13 kts.

Machinery:

Oil fuel: General

All single-funnelled except Arish, which has 2 funnels as shown. One named Gaza (ex-BYMS 2013) was lost on 26 July 1950, as a result of fuel-tank explosion off Mersa Matrouh. Sister ship Darfour (ex-BYMS 2041) and Tor (ex-BYMS 2175) were transferred to the Algerian Navy on 6 Nov. 1962.



ARISH

Official

INSHORE MINESWEEPERS

2 Ex-U.S.S.R. "T 301" Type

130 tons standard (180 tons full load) 100×16×4½ feet 2—37 mm. AA., 2—25 mm. AA. Diesels, 2 shafts, B.H.P. 480=10 kts. Displacement: Dimensions: Guns:

Machinery: Complement:

Reported to have been transferred by the U.S.S.R. to Egypt in 1962.

SUBMARINE CHASERS

3 Ex-U.S.S.R. "S.O.I" Type

Displacement: Dimensions:

215 tons light, 220 tons normal
138 (pp.), 147 (a.a.)×20×10 (max.) feet
4—25 mm. (2 twin mountings)
4 five-barrelled ahead throwing rocket launchers
3 diesels. B.H.P.: 3,500=28 kts. Guns:

Reported to have been transferred by the U.S.S.R. to Egypt in 1962.

MOTOR GUNBOATS

3 Ex-U.S.S.R. "Komar" Class Guided Missile Patrol Boats

Displacement:

75 tons standard (100 tons full load)
88 (o.a.)×21×6 feet
2 launchers with missiles of 10 to 15 miles range
Speed=40 kts,

Guided weapons: Machinery:

General

Former Soviet motor gunboats reported transferred from the U.S.S.R. in 1962.

A patrol boat named Nisr 2, 110 tons, is reported to have been launched at Port Said on 16 May 1963 by the Castro Naval Shipyard.



KOMAR Type

1966, col Biorn Borg

MOTOR TORPEDO BOATS

36 Ex-U.S.S.R. "PA" Type

Displacement: Dimensions: Guns: Machinery:

50 tons 85½×20×6 feet 4—25 mm. AA. M.G. 2—21 inch Speed=42 kts.

The first twelve boats were reported to have arrived at Alexandria on 19 Apr. 1956. Two E-boats were destroyed by British naval aircraft on 4 Nov. 1956. The above particulars refer to the early arrivals. Six former Soviet motor torpedo boats of the "96" class are reported to have been transferred by the U.S.S.R. in 1960. See particulars in the U.S.S.R. section.

6 Ex-Yugoslavian Type

Displacement: Dimensions: Guns:

56 tons full load $78 \times 20\frac{2}{3} \times 5\frac{1}{4}$ feet 1—40 mm. AA.

Tubes: Machinery:

3 Packard motors. 3 shafts. B.H.P.; 4,500=35 kts.

General

Purchased from Yugoslavia in 1956, Similar to United States Higgins boats.

Disposals

The two motor torpedo boats of the British Fairmile "D" type, El Naser and El Zafer, are reported to be for disposal.

MOTOR LAUNCHES

HAMZA (ex-ML 134)

SAB EL BAHR

SAKER EL BAHAR

Dimensions: Guns:

65 tons
112×184×44 (max.) feet
1-40 mm., 2-20 mm. AA.
2 Hall-Scott Defender engines. 2 shafts.
B.H.P.: 1,200=19 kts. Displacement: Machinery:

General

Fairmile "B" Type. Acquired from Great Britain, Nos. 251, 252 and 253.

TRANSPORT

EL QUSEIR (ex-El Amira Fawzia)

Displacement: Dimensions:

Guns: Machinery: Boilers:

2,640 tons 275×36×14 feet 2—3 pdr. Triple expansion. 2 shafts. I.H.P.: 2,130=14 kts. 2 S.E. (working pressure, 180 lb.). Oil fuel

Built by Swan, Hunter & Wigham Richardson, Ltd., Wallsend. Launched on 8 July 1929. Mercantile type. Fitted as transport for 400 men and 40 horses. Normally employed on coasting service carrying passengers. Pennant No. 91.

VACHTS

NTISAR (ex-Fakhr et Bihar)

Displacement: 1,069 tons

EL HORRIA (ex-Mahroussa)

Displacement: Dimensions: Machinery: Boilers:

4,561 tons

400 (pp.), 420 (w.l.), 477 (o.a.)×42½×17½ feet 3 Parsons turbines. 3 shafts. S.H.P.: 5,500=16 kts. 5 main and 1 auxiliary Inglis multi-tubular

Oil fuel: Complement: 346 tons 179+59 midshipmen

Built of iron by Samuda Bros., Poplar. Launched in 1865. Reconstructed by A. & I. Inglis, Glasgow, and re-boilered 1905, and refitted in 1946-47 at Malta Dockyard. Reconstructed 1949-50 at Odero-Terni, Muggiano, at a cost of over £1.250.000. Former Royal Yacht, Offered for sale in 1954, but visited Great Britain as a midshipmen's training ship, May- June 1955.

LANDING CRAFT

No. 7 No. 8 No. 9 No. 8 No. 9 No. 9 No. 9 No. 9 No. 8 No. 9 No. 9 No. 8 No. 9 No. 8 No. 9 No. 8 No. 9 No. 10 No. 11 No. 12 35 tons loaded) Displacement: Machinery:

or LCM type. (The tank landing ship Ako (ex-LST 178) was sunk as a block-ship Lake Timsah in the Suez Canal on 1 Nov., 1956)

EIRE

CORVETTES

3 Ex-British "Flower" Class

 Pennant No.
 Laid down
 Launched
 Comple

 02
 17 Sep. 40
 11 Aug. 41
 26 Nov.

 03
 21 Nov. 40
 6 Nov. 41
 29 Apr.

 01
 9 Dec. 40
 28 Aug. 41
 28 Dec.
 Completed CLIONA (ex-H.M.S. Bellwort) 26 Nov. 41 29 Apr. 42 MACHA (ex-H.M.S. Bord MAEV (ex-H.M.S. Oxlip) Borage)

1,020 tons standard (1,280 tons full load)
190 (pp.), 205 (o.a.)×33×14½ feet
1—4 inch, 1—2 pdr., 2—20 mm. AA.
Hedgehog. 2 D.C. racks
Triple expansion. I.H.P.: 2,750=16 kts. (designed),
best sea speed now 10 to 14 kts.
2 S.E.
230 tons Displacement: Dimensions: Guns: A/S weapons:

Machinery:

Oil fuel: Complement:

Construction Construction

Formerly British "Flower" class corvettes, Purchased from Great Britain in 1946.

The lattice mast was stepped in 1953. Cliona and Macha were built by George Brown & Co. (Marine) Ltd., Greenock and Maev by A. & J. Inglis Ltd., Pointhouse, Glasgow. Cliona and Maev underwent alterations in 1958 and 1959 respectively.



CLION/

1963, Irish Navy, Official

GC 2 (ex-Nohaba)

TENDERS

JOHN ADAMS

94 tons gross 85×18½×7 feet Diesel. B.H.P.; 125=8 kts. Measurement: Dimensions: Machinery:

Construction Built by Richard Dunston, Ltd., Thorne, Doncaster, Yorks. Launched in 1934.

GENERAL MCHARDY

Measurement: Dimensions: Machinery:

100 tons gross $76\frac{1}{4}{\times}18{\times}9\frac{1}{4}~~\text{feet}$ Compound reciprocating, I.H.P.: 200=9 kts. Construction

Built by Philip & Son, Ltd., Dartmouth, Devon, Launched in 1928. Ferry tender.

Measurement: Dimensions: 93 tons gross $85\times16\frac{1}{2}\times8$ fe

Machinery: Compound reciprocating, I.H.P.: 200=9 kts.

Construction
Built by Cox. Falmouth. Launched in 1903, Ferry tender and general utility craft.

EL SALVADOR

PATROL BOATS

GC 1 (ex-Fle-Ja-Lis)

tons $2 (o.a.) \times 16 \times 5\frac{1}{2}$ feet -20 mm, diesels. 2 shafts, Speed=12 kts.

Machinery:

Complement:

Displacement:

Dimensions:

Former British HDML type motor launches. Purchased from commercial sources in

ETHIOPIA

Imperial Ethiopian Navy

The Imperial Ethiopian Navy was founded in 1955. Norwegian

officers have assisted in its training and organisation.

At "Haile Selassie I" Naval Base in Massawa are the Naval College, established in 1956, the Frogmen/Diving School, and the Marine Commando Training School. The Naval School for Petty Officers and ratings is at Embaticalla. Workshops and other Base facilities have been constructed in Massawa.

Administration

The Imperial Ethiopian Navy is one of the three Services under the Chief of Staff Imperial Armed Forces. The Deputy Commander of the Imperial Ethiopian Navy has his Naval Headquaters in Addis Ababa.

Ababa.

Deputy Commander of the Imperial Ethiopian Navy:
Commander H.I.H. Prince Alexander Desta.

Vice to Deputy Commander: Colonel Mebratu Fisseha.

Chief Naval Adviser: Captain B. Bjorkhaug R. No. N.

Personnel

1966: 150 National officers and cadets, 780 National Enlisted men.

Ethiopia—continued

TRAINING SHIP

I Ex-U.S. AVP Type

ETHIOPIA (ex-U.S.S. Orca, AVP 49)

1.766 tors standard (2,800 tons full load) 300 (w.l.), $310\frac{1}{4}$ (o.a.)× $41\times13\frac{1}{2}$ (max.) feet 1.—5 inch, 38 cal., 5.—40 mm. AA. (but guns va 2 sets diesels. 2 shafts. B.H.P.: 6,080=18·2 kts. Displacement: Dimensions: Guns: Machinery: Complement:

Former United States seaplane tender. Built by Lake Washington Shipyard, Houghton. Wash. Laid down 13 July 1942, launched on 4 Oct. 1942 and completed on 23 Jan. 1944. Transferred from the U.S. Navy to the Imperial Ethiopiam Navy at the end of 1961. She serves as a training ship, Pennant No. A Ol.



ETHIOPIA

1964, Wright & Logan

MOTOR TORPEDO BOATS

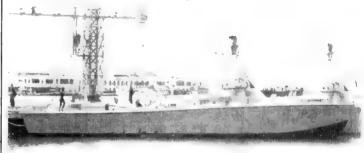
2 Ex-Yugoslav Type

SHARK P 21

BARRACUDA P 22

Displacement: 60 tons 69 (pp.), 78 (o.a.)×21½×7 feet 1—40 mm. AA., 2—12.7 mm. M.G. Dimensions: Guns: Tubes: Machinery 3 Packard petrol motors, Speed 40 kts. Complement:

Former Yugoslavian motor torpedo boats built late in 1951. Transferred and received by Ethiopia in Jan. 1960, and given fish mames.



SHARK (Barracuda behind)

1963 Imperial Ethiopian Navy, Official

PATROL BOATS

5 Ex-U.S.C.G. Type

PC 11 (ex-U.S.C.G. WVP 95304) PC 12 (ex-U.S.C.G. WVP 95310) PC 13 (ex-U.S.N. PGM 53) PC 15 (ex-U.S.N. PGM 54) PC 14 (ex-U.S.N. PGM 58) 95310) Displacement: 101 tons

15 (c.a.)×19×5 feet 1—40 mm AA, 4 diesels, 2 shafts, B.H.P.: 2,200=21 kts, 1.500 miles at cruising speed Dimensions: Guns: Machinery:

Radius:

Complement: 15

General

General
WVP 95304 and WVP 95310 are former U.S. Coast Guard cutters, Transferred
to the Imperial Ethiopian Navy from the U.S. Navy under the Mutual Defense
Assistance Programme in 1958. Ex-PGM 53 and Ex-PGM 54 are motor gunboats
of the same 95 ft. U.S. Coast Guard type built by Petersen Builders for transfer
under the Military Aid Programme in July amd Aug. 1961. Ex-PGM 58 was
transferred to the Imperial Ethiopian Navy under the Military Aid Programme in
June 1962. All are steel-hulled and twin-screwed.



PC 14

1962, Imperial Ethiopian Navy, Official

LANDING CRAFT General

There are 2 landing craft of the U.S. LCM type and 2 of the U.S. LCVP type, all acquired in 1963.

FINLAND

Administration

Commander-in-Chief, Finnish Navy: Rear-Admiral O. Lennes.

Naval Attaché in London: Captain J. Erik T. Helenius, F.N.

Naval Attaché in Washington: Colonel O.W. Tuomisalo

The Finnish Navy is limited by the treaty of Paris 1947 to 10.000 tons of ships and 4,500 personnel. Submarines and motor torpedo boats are prohibited.

Personnel

1966: 1,500 officers and ratings

Mercantile Marine

Lloyd's Register of Shipping: 420 vessels of 1,009,486 tons gross

FRIGATES (Saattajat)

2 "Uusimaa" Class

UUSIMAA

950 tons standard, 1.350 tons full load (official figures) 278½ (p.p.), 295½ (o.a.)×32½ ×11 feet Displacement: Dimensions:

-3.9 inch d.p. (single); 4-mm, AA. -21 inch Guns: 37

Tubes: A/S weapons: 1 Hedgehog, 4 depth charge

projectors 50 Mines:

Geared turbines. 2 shafts, S.H.P.: Machinery:

25,000=28 kts. **Boilers:**

2 150 Complement:

Former Soviet frigates of the "Riga" class. Purchased from the Soviet Union, and delivered to the Finnish Navy in spring 1964.



1964, Finnish Navy, Official

TRAINING FRIGATE (Koululaiva)

I Ex-British "Bay" Class

Displacement: 1.580 tons standard (2.420 tons

Dimensions:

1,580 tons standard (2,720 km. full load)
286 (pp.), 307½ (o.a.)×38½×
15½ feet
4—4 inch, 6—40 mm. AA,
1 Headgehog, 4 depth charge

A/S weapons: projectors
Triple expansion. 2 shafts 1.H.P.:
5,500=19 kts.

Machinery:

5,500=19 kts. 2 Admiralty 3 drum type 724 tons 9,500 miles at 12 kts. **Boilers:**

Former British frigate of the "Bay" class. Transferred from the Royal Navy to the Finnish Navy in March 1962. Employed as a training ship.

Oil fuel:

Radius: Complement:

Bullders MATTI KURKI (ex-H.M.S. Porlock Bay, ex-Loch Sea-forth, ex-Loch Mulck)

Charles Hill & Sons, Ltd., Bristol

Laid down 22 Nov. 1944

Launched 14 June 1945

8 Mar. 1946

MATTI KURKI

1966, A. & J. Pavia

COASTAL MINELAYERS (Miinalaivat)



KEIHÄSSALMI

Finnish Navy, Official

KEIHASSALMI

Displacement Dimensions: Guns: Mines:

360 tons 168×23×6 feet (officially revised figures) 2—40 mm, AA.; 2—20 mm, AA.

Machinery: 60 Complement:

M.A.N. diesels, 2 shafts, B.H.P.: 1,600=15 kts.

Construction

Construction

A coastal minelayer of improved "Ruotsinsalmi" type built at Valmet Oy Ship-yard, Helsinki, under contract dated June 1955, Launched on 16 Mar. 1957.



RUOTSINSALMI

RUOTSINSALMI

Displacement Dimensions: Guns: Mines:

310 tons 150×23×5 feet (officially revised figures) 2—40 mm. AA., 2—20 mm. AA.

Machinery; Complement;

2 Rateau diesels. 2 shafts. B.H.P.; 1,200=15 kts. 60

Construction Built by Crichton-Vulcan Shipyard, Turku. Laid down in 1937. Launched in May 1940. Completed in Feb. 1941.

FAST PATROL BOATS (Nopeat vartioveneet)

11 "Nuoli" Class

NUOLI 7 NUOLI 8

NUOLI 5 NUOLI 6 NUOLI 1 NUOLI 2 NUOLI 3 NUOLI 4

Displacement Dimensions:

40 tons (officially revised figure) 72½×213×5 feet 1—40 mm., 1—20 mm. AA. 3 diesels. B H.P. 2,700=40 kts. Guns: Machinery:

Complement: Construction

Designed and built by Laivateollisuus, Oy, Turku. First four were launched in 761 five more in 1962, and two more in 1963.



NUOLI 6

1965, Finnish Navy, Official



NUOLI 1

1962, Finnish Navy, Official

2 "Vasama" Class

VASAMA 1

VASAMA 2

Displacement Dimensions: Guns:

70 tons 67 (pp.), 71½ (o.g.)×19½×6 feet 2—40 mm. AA. 2 Napier Deltic diesels, B.H.P.; 5,000=42 kts.

Machinery:

Complement: 20 (officially revised figure)

Construction

British "Dark" type built by Saunders Roe (Anglesey) Ltd., Beaumaris, England, in 1955-57. A photograph of Vasama 1 appears in the 1957-58 to 1962-63 editions,

Disposais The former Italian fast patrol boats Hurja 1, Hurja 2, Hurja 3, Hurja 4 and Hurja 5 were scrapped in 1963.

The old fast patrol boats JYMY 1, JYMY 2, JYMY 3, and JYMY 4, formerly MAS 526, MAS 527, MAS 528 and MAS 529, were officially stricken from the list in 1961.

Of the fast patrol boats of the "Taisto" class, Taisto 2. Taisto 4 and Taisto."

list in 1961.

Of the fast patrol boats of the "Taisto" class, Taisto 2, Taisto 4 and Taisto 5 were scrapped in 1963, and Taisto 3, Taisto 6, Taisto 7 and Taisto 8 were removed from the effective list in 1966, it is officially stated.



VASAMA 2

1963. Finnish Navy, Official

CORVETTES (Tykkiveneet)

2 New Construction

Displacement:

circa 600 tons 2283×264 feet 1—4.7 inch automatic d.p. forward; 2—40 mm. AA. 1-4.7 inch (single) aft

A/S weapons:

Machinery:

Depth charge projectors
CODAG (combined diesel and gas turbine). Bristol
Siddeley Olympus gas turbine. H.P.: 22,000

General

NUOLI 9 NUOLI 10 NUOLI 11

Fast gunboats for trade protection ordered by the Finnish Navy on 23 Feb. 1965 from Wärtsilä-yhtymä Oy Shipyard, Helsinki, Flush decked, raked bow, simple and clean superstructure. Rocket flare guide rails on sides of 4.7 inch turret.



TYKKIVENE

1966, Finnish Navy, Official

COAST GUARD PATROL VESSELS (Vartiolaivat)

SILMA

Displacement Dimensions: Machinery:

490 tons $161\times26\times12$ feet B.H.P.: 1,800=13 kts.

Construction

Coast guard vessel built by Laivateo!lisuus. Oy, Turku, in 1962-63.



SILMÄ

1964, Finnish Navy, Official

UISKO

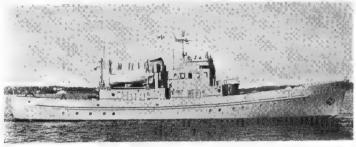
Displacement

Dimensions: Machinery:

350 tons $130\times22\times13$ feet B.H.P.: 1,800=14 kts.

Construction

patrol vessel built by Valmet Oy, Helsinki, Launched in 1958, Com-Cost guard pa



UISKO

1964, Finnish Navy, Official

TURSAS

Displacement Dimensions: Guns:

131½×23½×14 feet 1—3 inch, 1—40 mm. AA., 2—20 mm. AA. Diesel, B.H.P.: 620=12 kts.

Machinery: Built by Crichton-Vulkan, Launched in 1933. Coast Guard vessel under the Ministry of the Interior. A photograph of Tursas appears in the 1954-55 to 1963-64 editions.

AURA

Displacement Dimensions:

Machinery:

350 tons

128×23×11½ feet 1—3 inch, 2—20 mm. AA. Triple expansion, I.H.P.; 700=10 kts.

Launched In 1907. This vessel belongs to the Coast Guard, which is under the Ministry of the interior.

Disposals
The coast guard vessel Merikotka was officially deleted from the list in 1960.

MOTOR PATROL BOATS (Vartiomoottoriveneet) VIIMA

Displacement: Dimensions:

Guns: Machinery:

130 tons 117½×21½×7½ feet 1—20 mm. AA. 3 engines. B.H.P.: 4,050=25 kts.

Construction Coast guard patrol boat built by Laivateollisuus Oy Ab, Turku, Finland in 1964.



8 "Koskelo" Class

KAAKKURI KIILSA

KOSKELO

TELKKA KUIKKA

KURKI TAYI

Displacement Dimensions: Guns: Machinery:

Complement:

75 tons standard (97 tons full load) $96\frac{1}{2}\times16\frac{1}{2}\times3\frac{1}{2}$ feet 2—20 mm. AA,

2-20 mm. AA, 2 Mercedes-Benz diesels. 2 shafts. B.H.P.: 1,000=16 kts.

Construction

Built of steel and strengthened against ice, Koselko and Kulkko were completed in 1956. Remaining six were completed in 1958-60. A photograph of Koskelo appears in the 1957-58 to 1963-64 editions,



TAVI

1964, Finnish Navy, Official

2 "SP" Class

VMV 19

VMV 20

Displacement Dimensions:

35 tons (officially revised figure) $69 \times 13\frac{1}{2} \times 4$ feet

Guns: Machinery: 1-20 mm. Speed: 11 kts.

General

Built in Finland. Launched in 1943. Ex-Motor Jaunches SP 41, 42, VM 18 (ex-SP 1) was stricken from the list in 1958.

2 VMV Class

VMV 11

VMV 13

Displacement

Dimensions: Guns: Machinery:

35 tons (officially revised figure) $82\times13\frac{1}{4}\times3\frac{1}{4}$ feet 1—20 mm. Semi-diesel. B.H.P.: 1,200=25 kts.

Complement:

Complement: 9

General
Built in Finland. Launched in 1935. All the above motor patrol boats (Vilma, "Koskelo" class, and VMSs) belong to the Coast Guard which is under the Ministry of the interior.

Disposals

VMV 1, VMV 2 were sold in 1952. VMV 5 was scrapped in 1958. VMV 6 was scrapped in 1960 and VMV 9 in 1961. VMV 15 and VMV 16 were officially deleted from the list in 1965.

The motor launches NV 1, NV 2, NV 3, NV 4, NV 5, NV 6 NV 7, NV 8, NV 9 and NV 10, were officially deleted from the list in 1963.

CABLE SHIP (Kaapelialus)

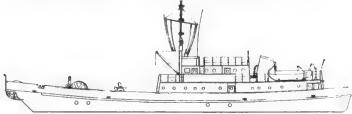
PUTSAARI

Displacement Dimensions:

Machinery:

430 tons 138×27×7 feet Diesel. B.H.P.: 450=10 kts.

Built by Rauma-Repola oy Shipyard, Rauma Launched in Dec. 1965.



PUTSAARI

1966, Finnish Navy, Official

INSHORE MINESWEEPERS (Raivaaiat)

5 "R" Class

RAISIO RIHTNIEMI

Machinery:

RÖYTTA

RUISSALO

RYMATTYLA

Displacement Dimensions: Guns:

110 tons standard (130 tons full load)
108\frac{1}{2}\cdot 8 \frac{1}{2}\cdot 6 feet
1-40 mm. Bofors, 1-20 mm. Masden
2 Mercedes-Benz diesels, B.H.P.; 1,400=15 kts.

Construction

Rihtniemi and Rymättylä were ordered in July 1955 and launched in 1956. Built by Rauma-Repela Oy, Shipyard, Rauma, Finland, Delivered on 20 May 1957. Variable pitch propellers. Ralslo, Röyttä and Rulssalo were built by Laivateollisuus, Turku, in 1959. A photograph of Rymättylä appears in the 1960-61 to 1963-64 editions.



RAISIO

1965, Finnish Navy, Official



ROYTTA

1962, Finnish Navy, Official

Disposals (Coastal Minesweepers)
Of the four ex-U.S. BYMS type coastal minesweepers, Tammenpaä and Vahterpää were sold for scrap in 1958. Purunpää was discarded as unfit for further service in 1959, and Katanpää was scrapped in 1960.

Disposals (Motor Minesweeping Boats)
The motor minesweeping boat Kallanpää was scrapped in 1963, and her sister ship Ajonpää was scrapped in 1959.

Of the motor minesweeping boats of the "Kuha" class, Kuha 2, Kuha 5, Kuha 7, Kuha 8, Kuha 12, Kuha 13, Kuha 14, Kuha 15, Kuha 16, Kuha 17 and Kuha 18 were scrapped in 1963, Kuha 10 and Kuha 11 were scrapped in 1961, and Kuha 1, Kuha 4 and Kuha 9 were scrapped in 1959-60.

Of the motor minesweeping boats of the "Ahven" class, Ahven 2, Ahven 3, Ahven 4 and Ahven 6 were scrapped in 1963. Ahven 1 and Ahven 5 were scrapped in 1961.

ICEBREAKERS (Jäänmurtajat)

TARMO

Displacement Dimensions: Machinery:

4,890 tons (officially revised figure)
281×71×21 feet
Wartsilā-Sulzer diesels, electric drive. 4 shafts. B.H.P.:
12.000=16·5 kts.

Constuction
Built by Wärtsilä-yhtymä oy Shipyard, Helsinki. Completed in 1963.



TARMO

1965, Finnish Navy, Official

Icebreakers-continued

3 "Karhu" Class

KATCHU

Displacement: Dimensions: Machinery:

3,370 tons 2431×57×20 feet

MURTAIA SAMPO

Diesel-electric. 4 shafts. B.H.P.: 7,500=16 kts.

Built by Wärtsilä-yhtymä Oy Shipyard, Helsinki Karhu was launched on 22 Oct. 1957, and completed at the end of 1958. Murtaja was launched on 23 Sep. 1958. Sampo was completed in 1960. A photograph of Murtaja appears in the 1962-63



SAMPO

1963, Finnish Navy, Official



KARHU

1966, Finnish Navy, Official

AMIOY

Displacement: Dimensions:

4.200 tons 254 $\frac{1}{2}$ (w.l.), 274 (o.a.)×63 $\frac{1}{2}$ (61 $\frac{1}{2}$ w.l.)×20 $\frac{1}{2}$ feet Diesels with electric drive. 4 shafts, B.H.P.; 14,000=16 $\frac{1}{2}$ kts. Machinery:

Oil fuel:

Built by Wärtsilä-yhtymä Oy Shipyard, Helsinki. Launched and completed in 1953 uilt for deep-sea work. Two propellers forward and aft. Transferred to the Board Navigation in 1956.



VOIMA

1965, Finnish Navy, Official

sisu

Dimensions: Displacement; Guns:

Machinery:

Complement:

2,000 tons 194 $\frac{1}{2}$ (w.l.), 210 $\frac{1}{4}$ (o.a.)×46 $\frac{1}{2}$ ×16 $\frac{1}{4}$ feet 2—3·9 inch AA. 3 sets Atlas Polar Diesels with electric drive, 2 shafts and a bow propeller, H.P.; 4,000=16 kts.

Construction
Built by Wartsila-yhtyma Oy Shipyard, Helsinki. Launched on 24 Sep. 1938.



1964, Finnish Navy, Official

Icebreakers-continued

OTSO

Dimensions:

900 tons
134½ (pp.), 144½ (o.a.)×37½×16½ feet
Triple expansion, with bow propeller, 1.H.P.: 1,860= Displacement: Machinery: Oil fuel:

60 tons Complement: General

Launched in 1936, Belongs to the town of Helsinki, Photograph in the 1953-54 and earlier editions.

APU (ex-Tarmo, ex-Sambo II)

Displacement:

2,400 tons $210\frac{1}{2}$ (w.l.), 220 (o.a.)×47×18 $\frac{1}{4}$ feet Triple expansion, 2 shafts, I.H.P.; 3,850=12 kts. Dimensions: Machinery:

Complement:

Built by Armstrong & Co. Ltd., Newcastle-on-Tyne. Launched in 1907. (Her name was changed when Sampo and Tarmo were allocated successively as mames for new icebreakers). A photograph of this ship (as Tarmo) appears in the 1958-59 to 1963-

Administration All the above icebreakers belong to the Board of Navigation, except the Otso, which belongs to the town of Helsinki.

Disposals

General

The old and less powerful Icebreakers Apu and Murtaja were scrapped in Spring 1959 and 1958, respectively. The old Icebreaker Sampo was scrapped in 1961.

TRANSPORT CRAFT (Kuljetusalukset)

6 "Kala" Class

KALA 3 KALA 4 KALA 2 KALA 1 KALA 5 KALA 6

Displacement; Dimensions:

60 tons 81 $\frac{1}{2}$ ×26 $\frac{1}{2}$ ×6 feet (officially revised figures) 2 diesels. B.H.P.: 370=9 kts.

Machinery:

Launched in 1956. Completed in 1959. Of LCU (utility landing craft) type. Officially classed as transport craft, A photograph of Kala 2 appears in the 1959-60 to 1962-63 editions.



KALA 6

1963, Finnish Navy, Official

SEILI (ex-F 177)

Displacement: Dimensions:

180 tons $\begin{array}{lll} 180 & tons \\ 143\times20\times4 & feet \ (officially \ revised \ figures) \\ 1--4\cdot1 & inch \ (105 \ mm). \\ Speed=10 \ kts, \end{array}$

Guns:

Machinery:

Former German MFP type landing craft converted and armoured. Launched in 1942. Lonna was scrapped in 1963, it is officially stated.

3 "Pansio" Class (Tug Type)

PANSIO (1947)

PORKKALA (1940)

PUKKIO (1929)

Displacement: Dimensions: Guns: Machinery:

162 tons
92×21½×9 feet
1—40 mm., 1—20 mm. AA
Diesel. B.H.P.: 300=10 kts.

Built by Valmet Oy, Turku. Launch dates above. Vessels of the tug type used as transports, minesweeping tenders, minelayers and patrol vessels. Can carry 20 mines. A photograph of *Porkkala* appears in the 1962-63 edition.

Troining Ship
It was officially stated in 1960 that the training ship Suomen Joutsen (ex-Oldenburg ex-Laennec) has been converted into a stationary seamen's school ship, and sold to the Finninsh Mercantile School.

TUGS (Hinaajat)

3 "Pirttisaari" Class

PIRTTISAAR! (ex-DR 7)

PYHTÄÄ (ex-DR 2)

PURHA (ex-DR 10)

Displacement:

150 tons (officially revised figure) $69\times20\times8\frac{1}{2}$ feet 1—20 mm. Speed=8 kts.

Machinery: Former United States Army Tugs. Launched in 1943-44. General purpose vessels used as minesweepers, minelayers, patrol vessels, tenders, tugs or peronnel trans-

DR 2 and DR 7 were adapted as the Coast Artillery transports Phytää and Pirttisaari in 1958 and 1959, respectively. A photograph of Phytää (DR 2) appears in the 1953-54 to 1962-63 editions.

FRANCE

Administration

Chief of the Naval Staff: Amiral G. E. J. Cabanier.

Assistant Chief of Naval Staff: Vice-Amiral de Bazelaire

Naval Attaché in London:

Contre-Amiral Marcel Andre Noël.

Naval Attaché in Washington:

Vice-Amiral Jean L. Michel Prache.

Second Five Year Plan 1965-70

The second five year plan provides for:

The new construction of:

- 3 nuclear powered fleet ballistic missile submarines,
- marines,

 5 so-called "corvettes" of 3,500 tons full load of "Aconite" class.

 1 Nuclear fleet submarine "Rubis" class

 2 Patrol submarines of "Daphne" class,

- 8 Minehunters.

The conversion and modernisation of:
6 Submarines, "Narval" class.
5 Destroyers as anti-submarine ships.

Projected Strength 1970

2 attack aircraft carriers, 1 helicopter carrier, 2 cruisers, 2 guided missile frigates, 4 guided missile destroyers, 14 destroyers, 27 frigates, 1 heavy corvette. 21 submarines, 10 maintenance ships, 13 landing ships, 100 minesweepers.

Personnel

1966: 71,000 (5,000 officers, 66,000 petty officers and men)

Mercantile Marine

Lloyd's Register of Shipping: 1,558 vessels of 5,198,435 tons gross

Aircraft Carriers

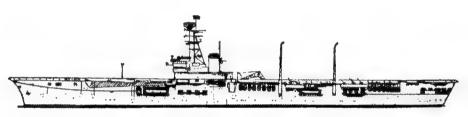
Silhouettes

Scale: 150 feet=1 inch

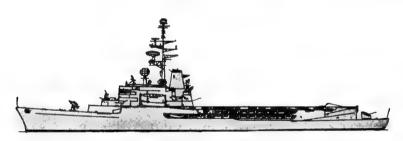
Cruisers



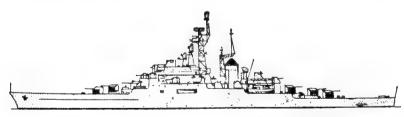
CLEMENCEAU, FOCH



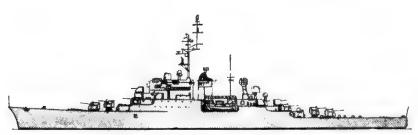
ARROMANCHES



JEANNE D'ARC (ex-La Résolue)



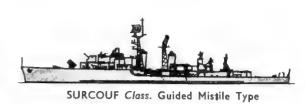
COLBERT (whale boat emplacement now suppressed)



DE GRASSE (now refitted as command ship)

Scale 150 ft.=1 inch







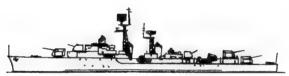




LA GALISSONNIERE

COMMANDANT RIVIÈRE Class

MALGACHE



DUPERRÉ Class. T. 53 R Type



L'ALSACIEN, LE PROVENCAL, LE VENDEEN



BEAUTEMPS-BEAUPRÉ Class



SURCOUF Class. Original T 47 Type



L'AGENAIS, LE BÉARNAIS



PAUL GOFFENY



SURCOUF Class. Command Type



LE NORMAND Class E 52 Type



GUSTAVE ZÉDÉ



D'ESTRÉES (VDS aft)



LE CORSE Class, E 50 Type



ILE d'OLÉRON

PENNANT NUMBERS

D =	=	Destroyers (Escorteurs d'Escadre and Escorteurs Rapides)			Frigates (E Submarines	
-----	---	--	--	--	---------------------------	--

teurs and Avisos)

P = Patrol Vessels (Patrouilleurs)

L = Landing Ships

M = Minesweepers (Dragueurs)

A = Auxiliaries (Survey Ships)

	D Flag Superior:	S Flag Superior—continued		4 Flag Superior—continued		4 Flag Superior—continued
521	Surcouf -	635 Aréthuse	617	Garigliano	731	La Lorientaise
322	Kersaint	636 Argonaute	618	Mytho	734	Croix du Sud
23	Cassard	637 Espadon	619	Vinh-long	735	Etoile Polaire
24	Bouvet		620	Berlaimont	736	Altair
25	Depetit Thouars	638 Morse	621	Origny	737	Capricorne
526	Chevalier Paul	639 Amazone	622	Autun	740	Cassiopée
27	Maillé Brézé	640 Ariane	623	Baccarat		Eridan
528	Vauguelin	641 Daphné	624	Colmar	741	
29	D'Estrées	642 Diane			742	Orion
30	Du Chayla	643 Doris	631	Pavot	743	Sagittaire
		644 Eurydice	632	Pervenche	744	Achernar
31	Casabianca	645 Flore	633	Pivoine	745	Procyon
32	Guépratte	646 Galatée	634	Renoncule	746	Arcturus
33	Duperré	647 Minerve	635	Réséda	747	Bételgeuse
34	La Bourdonnais		638	Acacia	748	Persée
35	Forbin	648 Junon	639	Acanthe	749	Phénix
36	Tartu	649 Venus	640	Aconit		
37	Jauréguiberry	655 Gymnote	667		750	Bellatrix
38	La Galissonniere	P Flag Superior:			751	Dénébola
		• .	668	Azalée	752	Centaure
	F Flag Superior:	630 L'Intrépide	669	Begonia	753	Fomalhaut
72.4	Malanaha	635 L'Ardent	670	Bleuet	754	Canopus
724	Malgache	637 L'Etourdi	671	Camélia	755	Capella
725	Victor Schoelcher	638 L'Effronté	672	Chrysanthéme	756	Céphée
726	Commandant Bory		673	Coquelicot	757	Verseau
727	Amiral Charner		674	Cyclamen		
728	Doudart de Legreé	640 Le Fringant	675	Eglantine	758	Aries
729	Bainy	641 Le Fougueux	676	Gardénia	759	Lyre
733	Commandant Riviére	642 L'Opiniatre		Giroflée	765	Mercure
748	Protet	643 L'Agile	677			Tulipe
749	Enseigne de Vaisseau Henry	644 L'Adroit	678	Glaieul	772	Armoise
		645 L'Alerte	679	Glycine	773	Violette
761	Le Corse	646 L'Attentif	681	Laurier	774	Oeillet
762	Le Brestois	647 L'Enjoué	680	Jacinthe	775	Paquerette
763	Le Boulonnais	648 Le Hardi	682	Lilas	776	jasmin
764	Le Bordelais		683	Liseron		
765	Le Normand	730 La Combattante	684	Lobelia	781	Aubepine
766	Le Picard	F1 - C 1		Magnolia	782	Capucine
767	Le Gascon	L Flag Superior:	685		783	Hortensia
768	Le Lorrain	9003 Argens	686	Marguerite	784	Geramium
769	Le Bourguignon	9004 Bidassoa	687	Mimosa	785	Hibiscus
			688	Muguet	786	Dahlia
770	Le Champenois		701	Sirius	787	Jonquille
771	Le Savoyard	9006 Cheliff	702	Rigel		
772	Le Breton	9007 Trieux	703	Antarès	788	Myosotis
773	Le Basque	9008 Dives	704	Algol	789	Petunia
774	L'Agenais	9009 Blavet	705	Aldebaran		
775	Le Béarnais	9020 Foudre	706	Régulus		A Flag Superior
776	L'Alsacien	9021 Ouragan	707	Véga.		w rieg auberior
777	Le Provencal				400	Attilada
		M Flag Superior:	708	Castor	682	Alidade
778	Le Vendéen	609 Narvik	709	Pollux	683	Octant
	S Flag Superior:	610 Ouistreham	710	Pégase	752	Beautemps Beaupré
/12	Roland Morillot	612 Alencon	726	La Dunkerquoise	753	La Pérouse
613		613 Berneval	727	La Malouine	754	Paul Goffeny
631	Narvai		728	La Bayonnaise	758	La Recherche
632	Marsouin	614 Bir Hacheim	729	La Paimpolaise	780	Astrolabe
633	Dauphin	615 Cantho	730		781	Boussole
634	Requin	616 Dompaire	/ /30	La Dieppoise	/61	DOGFFOIG

FRENCH CARRIER-BORNE AIRCRAFT										
Name	Maker	Туре	Dimensions	Power Plant	Armament	Performance				
ETENDARD IV-M	Dassault	Single-Seat Inter- ceptor and Fighter-Bomber	Wing Span 31 ft. 6 in. Length 47 ft. 3 in.	One SNECMA Atar 8 turbojet	Two 30 mm. can- non, 3,000 lb. of bombs or missiles	Max. speed 673 m.p.h. at 36,000 ft. Range 370- 1,000 miles				
ETENDARD IV-P	Dassault	Single-Seat Reconnaissance/ Flight Refuelling Tanker Aircraft	Wing Span 31 ft. 6 in.	One SNECMA Atar 8 turbojet	Cameras in nose and underfuselage pack	Max. speed 673 m.p.h. at 36,000 ft. Range 370- 1,000 miles				
Br 1050 ALIZÉ	Breguet	Three-Seat Anti- Submarine Aircraft	Wing Span 51 ft. 2 in. Folded 22 ft. 11 in. Length 45 ft. 6 in.	One Rolls-Royce Dart R. Da. 7 turboprop	One ASM torpedo. Up to five depth charges. Six rockets or two missiles	Max speed 322 m.p.h. Normal endurance 4 hr. 30 min.				

French carriers also equipped with U.S.-built F-8E (FN) Crusader fighters and French-built Sikorsky SH-34 (HSS-1) helicopters.

Туре	Name	Maker	Length ft.	Propulsion	Speed Mach.	Range miles	Guidance System	Notes
SURFACE-TO SURFACE	Malafon	Latécoère	19.66	Two solid boosters only. Unpowered in cruise	0.6	11	Command	Aeroplane configuration. Built around 21 in. acoustic homing torpedo. In service,
SURFACE-TO- AIR	Masurca Mk. 2	Ruelle Arsenal	28.2	Two-stage solid propellent	2.5	25	Semi- active radar	To be standard naval anti- aircraft armament

AIRCRAFT CARRIERS (Porte-Avions)

2 "Clemenceau" Class

22,000 tons standard (27,307 tons normal, 31,000 tons full load) Displacement: Dimensions:

load)
833½ (pp.), 845 (o.a.)×96½
(huil) in Clemenceau, 104
(huil with bulges in Foch), 151
(max.)×24 feet. See Bulge
notes
8—3.9 inch (100 mm. automatic) AA. in single turrets
Flight deck, hull (over machinery spaces and magazines),
island superstructure and bridges
Capacity 30. including jet air-

Guns: Armour:

> Capacity 30, including jet air-craft. They carry 3 flights 1 of Etendard IV, 1 of Aquilon, 1 of Breguet-Alizé. (See Aircraft notes.)

2 Mitchell-Brown Steam Mk. BS ·5 Catapults:

Machinery:

BS ·5 Penhoët geared turbines. 2 shafts. SHP.: 126,000=32 kts. 6 (See Engineering notes) 4,000 tons 7.500 miles at 18 kts., 4,800 miles at 24 kts 2,700 (including 179 officers) Boilers:

Oil fuel: Radius:

Complement:

Aircraft:

Complement: 2,700 (including 179 officers)

Construction

These are the first aircraft carriers designed as such and built from the keel up to be completed in France. Authorised in 1953 and 1955 respectively. Clemenceau was ordered from Brest Dockyard on 28 May 1954 and begun in Nov. 1955. Foch began construction at Chantiers de l'Atlantique a St. Nazaire, Perhoet-Loire, in a special dry dock (the contract provided for the construction of the hull and propelling machinery) and was completed by Brest Dockyard.

Aircraft

50 Crusaders were purchased during 1965 for Clemenceau and Foch.

Flight Deck

They have the angled deck incorporated, two lifts, measuring 52½×36 feet, one of them on the starboard deck edge, two steam catapults for aircraft up to 11 tons, and two mirror sight deck landing aids. The flight deck measures 543×96½ feet and is angled at 8 degrees.

Hangar

Dimensions of the hangar are: 4974×87×28 feet,

Dimensions of the hangar are: 4973×87×28 feet.

Drawing

Port elevation and plan of Clemenceau. Scale: 128 feet=1 inch. Redrawn in 1960.

CLEMENCEAU (PA 54) FOCH (PA 55)

Pennant No. R 98 R 99

Builders Penhoët-Loire & Laid down Nov. 1955 Feb. 1957

Launched 21 Dec. 1957 23 July 1960

Completed 22 Nov. 1961 15 July 1963



CLEMENCEAU

1966, French Navy, Official

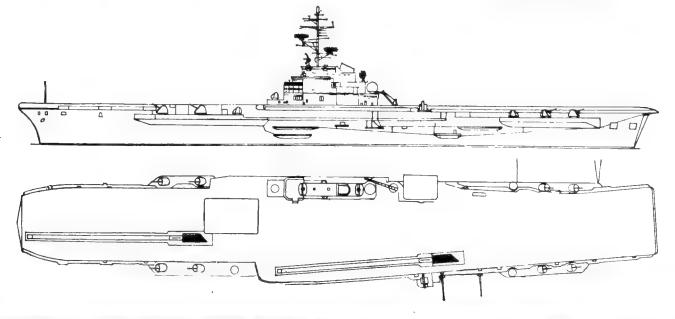
Gunnery

These aircraft carriers were originally to have been of the light fleet type with an armament of 24—2.25 inch guns in twin mountings, but the armament was revised to 12—3.9 inch (100 mm.) in 1956 and to 8—3.9 inch (100 mm.) in 1958. The 100 mm. guns are of a new design. Rate of fire 60 rounds per minute.

Bulge
Foch was completed with bulges, and she therefore
has greater width, see above official figures. These
bulges having proved to be successful during trials,
Clemenceau will be modified similarly when she undergoes her first refit.

Engineering
The boilers work at a steam pressure of 45 kilograms per square centimetre (640 pounds per square inch), the steam being superheated to 450 degrees Centigrade (842 degrees Fahrenheit).

Photographs
A starboard broadside view, a port bow oblique aerial view, and an overhead plan view of Ciemenceau showing angled deck, appear in the 1960-61 and 1961-62 editions; and a port oblique aerial view and a bows-on aerial view in the 1962-63 edition. A port quarter aerial view of Foch in the 1963-64 to 1965-66 editions and a port broadside surface view of Ciemenceau in the 1964-65 and 1965-66 editions.





FOCH

1966, French Navy, Official

Dimensions: Guns: Aircraft:

Machinery:

Aircraft Carriers-contd.

Pennant No. R 95

Builders Vickers-Armstrongs Ltd. (Tyne)

Laid down 1 June 1942

Launched 30 Sep. 1943

Completed 16 Dec. 1944

ARROMANCHES (ex-H.M.S. Colossus)

I Ex-British "Colossus" Class Displacement:

14,000 tons standard (19,600 tons full load)
Length: 694½ feet (o.a.), Beam: 80¼ feet. Width: 118 feet (o.a.), Draught: 23 feet Removed (See Gunnery notes) 24 (variable) including helicopters

24 (variable) including helicopters
Parson geared turbines. 2 shafts.
S.H.P.: 40,000=23.5 kts.
4, of 3-drum type
3,200 tons
12,000 miles at 14 kts.; 6,200 miles at 23 kts.
1,019 (42 officers and 777 men, and 200 for air service)

Boilers: Oil fuel: Radius:

Complement:

General
This ship was lent to the French Navy for five years from August 1946 with the option of purchase in 1951, which was taken up, and she was permanently transferred from Great Britain in that year. Extensively refitted 1950-51; and again refitted in 1957-58 (see Reconstruction notes). She is now employed as a training carrier, with no guns. carrier with no guns.

Reconstruction

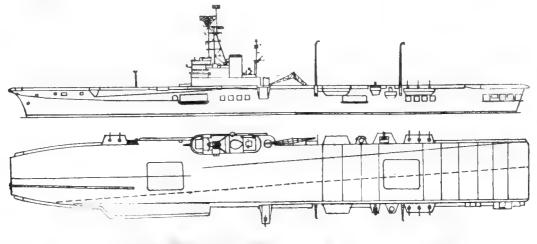
Modernised and partially rebuilt in 1957-58 with the angled deck at 4 degrees, and mirror sight deck landing aid sponsons, the overall width being increased from 112½ feet to just over 118 feet (35 metres). In consequence of these modifications the ship is able to receive the new Breguet Alizé ASM aircraft of the 1050 type. type.

Enginering
Engines and boilers are arranged en echelon, one set of turbines and two boilers being installed side by side in each of the two main propelling machinery spaces. The boilers work at a steam pressure of 400 lb. per sq. in. and a temperature of 680 degrees F superheat.

Gunnery
She formerly mounted 43—40 mm. AA. guns (as refitted) but these were removed when she became a training carrier,

Drawing

Port elevation and plan, Drawn in 1959. Scale: 128 feet=1 inch.

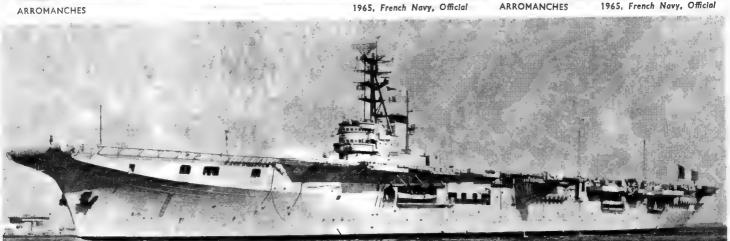




1965, French Navy, Official



1965, French Navy, Official



ARROMANCHES

1959, French Navy, Official

HELICOPTER CARRIER

(Croiseur Porte-Hélicoptères)

JEANNE D'ARC (ex-La Résolue)

Pennant No. R 97

Buildes Brest Dockyard Ordered 8 Mar. 1957

Laid down 7 July 1960

Launched 30 Sep. 1961

Completed
1 July 1963 (for trials)
30 June 1964 (operational)

I Training/Commando Type

Displacement:

10,000 tons standard (12,000 tons full load)
Length: 590½ feet (o.a.) Beam: 78½ feet (hull). Draught: 20½ feet (max.). Helicopter platform: 230×85 feet
4—3.9 inch AA. single mountings Dimensions:

ings

Guided weapons:

ings
Twin launcher for "Masurca"
surface-to-air missiles
Heavy anti-submarine helicopters
(4 in peacetime as a training
ship, 8 in wartime) Aircraft:

Machinery:

Boilers:

Oil fuel:

ship, 8 in wartime)
Rateau-Bretagne geared turbines.
2 shafts. S.H.P.: 40,000=26.5
kts. (designed)
4, working at a pressure of 640
lib. per sq. in. and a temperature
of 842 deg. F. of superheat
1,360 tons
6,000 miles at 15 kts.
920 (40 officers, 200 petty officers, 490 men, 190 cadets) Radius: Complement:

General

Guns:

General

Authorised under the 1957 estimates. Used for training officer cadets in peacetime in place of the old training cruiser jeanne d'Arc which was discarded in 1964.In wartime, after rapid modification, she would be used as a commando ship, helicopter carrier or troop transport with commando equipment and a battalion of 700 men. The lift has a capacity of 12 tors. The ship is almost entirely air-conditioned.

She was originally designed to mount six 100 mm. (3.9 inch) guns (now four), and a quadruple mortar, now replaced by a twin launcher for "Masurca" surface-to-air guided missiles.

Electronics

The ship is almost as well equipped with electronic apparatus as the aircaft carrier Clemenceau. She also has long range sonar gear.

Nomenclature

The name La Résolue was only a temporary one until the decommissioning of the training cruiser Jeanne d'Arc which was relieved by La Résolue in 1964 when the latter ship took the name Jeanne d'Arc, on 16 July.

Modifications

Modifications
Between first steaming trials and completion for operational service the ship was modified with a taller funnel to clear the superstructure and obviate the smoke and exhaust gases swirling on to the bridges.

After completion, in 1964, the whaleboat emplacement was plated in.

ment was plated in.

Photographs Photographs of Jeanne d'Arc (as La Résolue), before modification with taller funnel, appear in the 1963-64 edition; near broadside surface view, starboard quarter surface view, and port quarter oblique aerial view showing hangar open. The latter view also appears in the 1964-65 edition. A port bow view and a starboard quarter view, both before the whaleboat emplacement was plated in, appear in the 1964-65 and 1965-66 editions.

Disposal of Escort Carrier

Disposal of Escort Carrier
The auxiliary aircraft, carrier Dixmude (ex-H.M.S.
Biter, ex-Rio Parana), officially rated as Transport
d'Aviation, former U.S. escort carrier, reduced to a
hulk in 1960 and used as a barracks, was returned to
the U.S.A. in 1965. (For disposals of Fast Light Fleet
Aircraft Carriers, Battleships, Cruisers, and Light
Cruisers, see 1964-65 edition.)



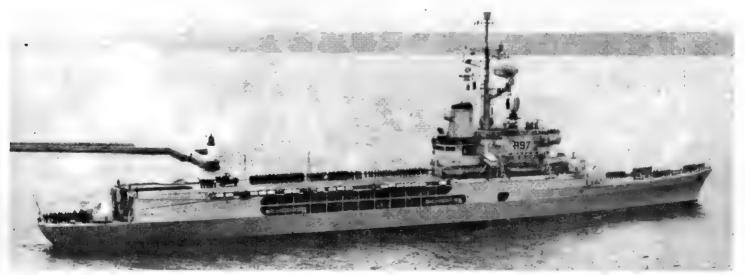
JEANNE D'ARC

1965, French Navy, Official



JEANNE D'ARC

1966, courtesy Admiral M. Adam



JEANNE D'ARC (whaleboat emplacement plated in)

1966, French Navy, Official

SUBMARINES

I Nuclear Powered Fleet Type Hunter Killer (SSN)

RUBIS (Q 255)

Displacement: Dimensions: Tubes: Machinery:

Complement:

3,800 tons 2753×341×25 feet 6 internal Nuclear reactor. Geared turbines. circa 100

General

A nuclear powered fleet submarine of a new hunter killer type and high performance of which no further particulars have been officially released, projected under the second five-year plan, is expected to commence assembly on the slip in 1968.

REDOUTABLE SNLE 1 (Q 252)

Builders Cherbourg Laid down Mar. 1964

Launch Estimated Mar. 1967 Completion Estimated 1969

Operational Estimated 1970

I Nuclear Powered Fleet Ballistic

Missile Type (SSBN)

Displacement:

Dimensions: Guided weapons: 7,900 tors surface, 9,000 tons submerged 420×34½×32½ feet 16 tubes amidships for "Polaris" type missiles with a range of 1,250 to 1,900 miles

Torpedo tubes: Machinery:

Complement:

1 nuclear reactor. Geared turbines.. Speed=20 kts. surface, 25 kts. submerged 135 (14 officers, 121 men). Two alternating crews.

LE I (model

1964, French Navy, Official

General

The first French nuclear powered, ballistic missile armed submarine, Prototype of the "Force Frappe" of "parable with the United States "Polaris" weapons.

I Experimental Missile Type

Displacement: Dimensions:

Guided weapons:

Machinery: Complement: 3,800 tons
275×344×25 feet
4 tubes for "Polaris" type fleet
ballistic missiles
Diesels and electric motors. 2
shafts. B.H.P.: 2,600=11 kts.
surface, 10 kts, submerged
70 (8 officers, 62 men) plus
40 techniciams and engineers

A submarine experimental platform for the testing of ballistic missiles destined for the first French nuclear powered "Polaris" type submarine, and for use as an underwater laboratory to prove trial equipment and arms for nuclear submarines.

GYMNOTE (Q 251)

Builders Cherbourg Laid down Mar. 1963 Launched 17 Mar. 1964

Completion

GYMNOTE

1966, French Navy, Official

II "Daphne" Class

Name	Pennant N	lő. Launch	ed	Co	mplet	ed
DAPHNÉ	\$ 641	20 June		1	June	1964
DIANE	S 642	4 Oct.	1960	20	June	1964
DORIS	\$ 643	14 May		26	Aug.	1964
EURYDICE	5 644	19 June	1962			
FLORE	S 645	21 Dec.	1960	21	May	1964
GALATÉE	S 646	22 Sep.	1961	25	July	1964
IUNON	S 648	11 May	1964			
MINERVE	\$ 647	31 May	1961	10	June	1964
VENUS	S 649	24 Sep.	1964			

Displacement:

Dimensions: Machinery:

850 tons surface, 1,040 tons submerged 190½×22½×15½ feet 12 (8 bow, 4 stern) SEMT-Pielstick diesel-electric, 2 shafts. H.P. 1,300/1,600=16 krs.

kts. 45 (6 officers, 39 men) Complement;

Construction
Daphné, Diane and Minerve were built by Dubigeon,
Nantes, and Doris, Eurydice, Flore, Galatée, Junon and
Venus by Cherbourg.

Completion

The revised completion dates given above are the actual dates of "admission to active service" announced officially.

A photograph of Flore appears in the 1961-62 edition.

New Construction
The comstruction of two more submarines of this class, known as "Q 253" and "Q 254" until they are officially named, was started at Brest in 1965.



EURYDICE

1966, A & J. Pavia



GALATEE

1965, courtesy Dr. Giorgio Arra



DAPHNE

1962, French Navy Official

Submarines—contd.

4 "Arethuse" Class

Displacement:

400 tons (standard), 529 tons (surface, 650 tons (submerged) $164 \times 19 \times 12\frac{3}{4}$ feet

Dimensions:

Machinery:

SEMT-Pielstick 12-cyl. diesel-electric, 1 shaft. H.P. 1,060/ 1,300=16 kts, surface, 18 kts, submerged 39 (5 officers, 34 men)

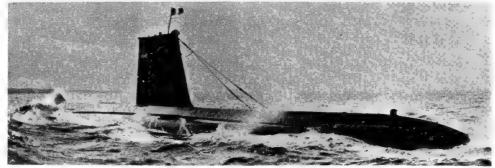
Complement:

Construction

All built at Cherbourg. Submarine-killer type for hunting enemy submarines. Streamlined hull, silent motors, and up-to-date electronic and detection equipment.

Photographs
A photograph of Argonaute appears in the 1959-60 to 1963-64 editions, and of Amazone in the 1964-65 and 1965-66 editions.

Laid down Dec. 1955 Mar. 1955 Mar. 1955 Programme 1954 1953 Pennant No. Builders Completed Launched **AMAZONE** S 639 S 635 S 636 S 640 Cherbourg 3 Apr. 58 9 Nov. 57 29 June 57 12 Sep. 58 1 July 59 23 Oct. 58 11 Feb. 59 16 Mar. 60 ARÉTHUSE Cherbourg Cherbourg Dec. 1955 1954 Cherbourg



ARIANE

1966, French Navy, Official

6 "Narval" Class

1,200 tons (standard), 1,640 tons (surface), 1,910 tons (submerged) 256×23½×18 feet 8 (6 interior, 2 exterior), 14 torpedoes. Torpedo tubes are quick leading Displacement:

Dimensions:

Tubes:

Machinery:

8 (6 interior, 2 exterior), 14 torpedoes. Torpedo tubes are quick loading Schneider 2-stroke, 7 cylinder diesels. B.H.P.: 4,000=16 kts. surface. Electric motors. H.P.: 5,000=18 kts. submerged 15,000 miles with Schnorkel at 8 kts. 58 (7 officers, 51 men)

Radius: Complement:

Construction

Designed as oceangoing submarines. Improved versions of the German XXI type. Dauphin, Marsouin, Narval and Requin were built in seven prefabricated parts each of 10 metres in length.

Nomenclature

Dauphine means Dolphin, Espadon means Swordfish, Marsouin means Porpoise, Morse means Walrus, Narval means Narwhal, and Requin means Shark.

Photographs

Photographs
Photographs of Narval as first completed without bulbous bow appear in the 1957-58 edition, and a photograph of Requin appears in the 1959-60 and 1960-61 editions, and of Narval with bulbous bow and of Dauphin in the 1957-58 to 1965-66 editions.

Reconstruction

It was announced in 1965 that these submarines would be reconstructed and given a new propulsion plant. Requin and Esparon are already being refitted at Lorient, it is officially stated.

Engineering
New main machinery installed on reconstruction will
include diesel-electric drive on the surface with SEMTPIELSTICK diesels.

PIELSTICK diesels.

Disposals of "La Créole" Class
Of "La Créole" class L'Africaine was withdrawn from active service on 1 July 1961 (she was reported to be worn out), La Créole was officially deleted from the list in Mar. 1963, L'Androméde and L'Astrée in 1965, and L'Artémis In 1966.

Disposals of "5" Class
Of the former British submarines of the "S" class, Siréne was returned to Great Britain at Gosport on 24 Oct. 1958 and reverted to the original name Spiteful, and Sultane was returned to Great Britain at Rosyth on 5 Nov. 1959 and reverted her original name Statesman. Saphir (ex-Satyr) was also returned to Great Britain on 11 Aug. 1961 to await disposal at Rosyth. Sibylie (ex-Sportsman) was lost accidently with all hands on 23 Sep. 1952, near Toulon.

DAUPHIN ESPADON MARSOUIN MORSE NARVAL REQUIN	Pennant No. \$ 633 \$ 637 \$ 632 \$ 638 \$ 631 \$ 634	Programme 1950 1954 1949 1954 1949 1950	Builders: Cherbourg Normand Cherbourg Seine Maritime Cherbourg Cherbourg	Laid down Jan. 1952 Mar. 1957 Nov. 1951 Dec. 1956 Oct. 1951 Feb. 1952	Launched 17 Sep. 1955 15 Sep. 1958 21 May 1955 10 Dec. 1958 11 Dec. 1954 3 Dec. 1955	Completed 1 Aug. 1958 2 Apr. 1960 1 Oct. 1957 2 May 1960 1 Dec. 1957 1 Aug. 1958
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MORSE

1966, French Navy, Official



MARSOUIN

1966, French Navy, Official



ESPADON

1965, French Navy, Official

ROLAND MORILLOT (ex-U 2518)

Displacement: Dimensions:

1,330 tons standard, 1,600 tons surface, 1,827 tons submerged 237 (pp.), 252} (o.a.)×213×20} feet

Machinery:

X204 feet
Removed (see General notes)
2 MAN 6-cyl. diesels. B.H.P.:
2.600=15 lxts.: 2 electric motors. H.P.: 5,000=16 kts.
250 tons
11,150 miles at 12 kts.: 9,000 miles at 8 kts. with Schnorkel

Oil fuel: Radius: Complement:

Genera!

Former German oceangoing Type XXI U-boat. Built by Blohm & Voss, Hamburg and completed in 1945. Transferred by Great Britain to the French Navy in 1945, All torpedo tubes were suppressed in 1964. She is now an experimental submarine. Pennant No. S 613.



ROLAND MORILLOT

1966, French Navy, Official

Blaison (ex-U 123), former German Type IX B, was discarded in 1957. Bouan (ex-U 510), former German Type IXC, was scrapped in 1958.

Of the two former German Type VII C boats, Lauble (ex-U 766) was withdrawn on 17 Oct. 1961 (seriously damaged by collision and scrapped) and Mille (ex-U 471) in Aug. 1963.

COLBERT

Guns:

Pennant No.

Displacement:

Builders Laid down Launched Completed Commissioned
Brest Dockyard Dec. 1953 24 Mar. 1956 (floated out 1958 (trials end of 1957) 5 May 1959
of dry dock)

Dimensions:

Aircraft: Armour: Machinery:

8,720 tons standard (11,000 tors full load)
Length: 574½ (pp.), 597½ (o.a.) feet. Beam: 63½ feet. Draught: 18½ feet
16—5 inch AA. (8 twin mountings), 20—57 mm. Bofors AA. (10 twin mountings)
1 helicopter
Has some protection, See notes
CEM-Parsons geared turbines, 2
shafts. S.H.P.: 86,000=32 kts.
4, working at a pressure of 640 lb, per sq. in and a temperature of 842 deg. F of superheat
4,000 miles at 25 kts.
977 (70 officers and 907 men) Boilers:

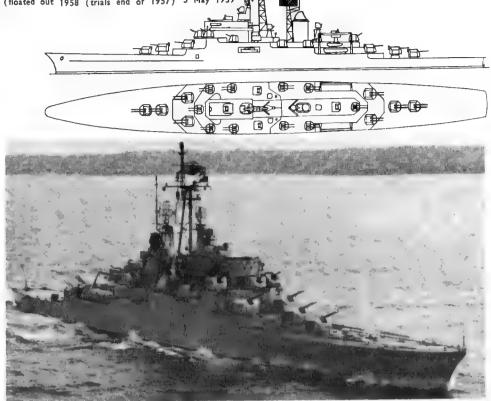
Radius: Complement:

General
Provision was made in the design so that she cam be fitted eventually with guided missiles. Has a new scheme of protection, and a platform for a helicopter. Equipped as a fleet command ship and for radar control of air strikes. As a fast transport she could carry 2,400 men and equipment. Taken in hand for refit in Oct. 1962. Guns are radar controlled with stabilised gunlayers for

automatic tracking.

Photographs
Photographs of Colbert before modifications and the suppression of the whaleboat emplacement appear in the 1965-66 and earlier editions.

Port elevation and plan. Scale: 128 feet=1 inch. The whale boat emplacement was suppressed in 1963.



(Croiseurs Anti-Aérien)

COLBERT (whaleboat emplacement suppressed)

1966, French Navy, Official

Pennant No. C 610 Lorient Dockyard and Brest Dockyard (see notes) DE GRASSE 9,380 tons standard (11,545 tons full load)
Length: 592 (pp.), 617½ (o.a.)
feet. Beam: 61 feet. Draught:
18½ feet (mean)
12—5 inch AA. (6 twin mount-Displacement: Dimensions:

Guns:

Armour:

12-5 inch AA. (6 twin mountings).

Has some protection including armoured deck and side belt. Rateau-Charlers de Bretagne geared turbines. 2 shafts, S.H.P.: 105,000=33-5 kts.

4 multitubular 1,850 tons 5,000 miles at 18 kts.
983 (86 officers and 897 men with Admiral on board); 950 (60 officers and 890 men) as a private ship Machinery:

Poilers: Oil fuel:

Radius Complement:

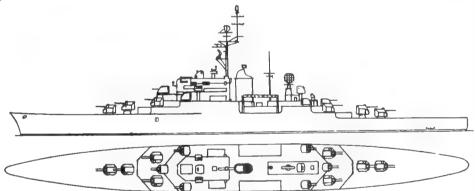
Builders

private ship

General Ordered under the 1937 Estimates. Her construction was suspended during the German occupation of Lorient, but was resumed in 1946 until her launch when building was stopped. Construction was again resumed on 9 Jan. 1951. Completed in Brest Dockyard as an anti-aircraft cruiser to a modified design. She is equipped as a fleet command ship and for radar control of air strikes.

Modifications Modifications
Refitted at Brest as Flagship of the Pacific Experimental Nuclear Centre in 1966. Signal department enlarged, and several turrets suppressed.

Laid down Launched Nov. 1938 11 Sep. 1946 Completed Aug. 1955 (trials) Commissioned
3 Sep. 1956 (operational) Engineers A. & C. de Bretagne



Gunnery
Guns are radar controlled with stabilised gunlayers
All the 57 mm Bofors AA. guns (six twin mountings)
and two twin 5 inch guns were suppressed during the
conversion as flagship of the Pacific Experimental

Photographs
Photographs of De Grasse before conversion from anti-aircraft cruiser to command ship appear in the 1965-66 and earlier editions.

Port elevation and plan before conversion. Scale: 128 feet=1 inch.



GUIDED MISSILE FRIGATES (Fregates Lance- Engins)

2 "Suffren" Class (FLE 60 Type)

Displacement:

4,700 tors standard (5,700 tons full load)
Length: 485½ (pp.), 519½ (o.a).
feet. Beam. 51 feet. Draught:
19½ feet
Twin launcher for "Masurca" Dimensions:

Guided weapons:

Guns:

A/S weapons:

Twin launcher for "Masurca" surface-to-air missiles 2 single automatic 3.9 inch AA. 2 single automatic 30 mm, AA. Malafon guided missile (rocket glider dropping a homing torped in vicinity of enemy submarine) Fixed tubes for homing torpedoes launched directly from the

Machinery: Boilers:

does launched directly from the ship.
Double reduction geared turbines 2 shafts. S.H.P.: 70,000=34 kts.
4 automatic, working at a pressure of 640 lbs. per sq. inch and a temperature of 842 deg. F of superheat.
5,000 miles at 18 kts.
446 (39 officers, 407 ratings)

Radius:

Complement:

Construction

Construction
Ordered under the 1960 Programme. The structure of the ship provides the best possible resistance to atomic blast. Fitted with up-to-date detection devices (radar and sonar). Carefully studied habitability is a nature of the design. Equipped with stabilisers, Originally to have carried an anti-submarine helicopter.
Only two ships of the class will now be built instead of the three originally projected. Other frigates of the same type but of larger size will be built later.

Design

There have been several recastings of the design, see silhouette drawing in the 1961-62 and 1962-63 editions, and photograph of the interim model in the 1963-64 and 1964-65 editions, A photograph of the ultimate model and an official sketch appear in the 1965-66 edition.

Reclassification

Necrassincation
Until 1961 this type was officially known as "guided missile cruiser," but as it more nearly approximated to the current destroyer leader category it was reclassified as "guided missile frigate".

Builders Laid down Brest Dockyard Lorient Dockyard DUQUESNE Nov. Dec. SUFFREN

Launched 12 Feb. 1966 15 May 1965

Trials Jan. 1968 Dec. 1965 Operational



SUFFREN

1966, French Navy, Official



SUFFREN

1966, French Navy, Official



SUFFREN (on trials)

1966, French Navy, Official

5 New Construction "Aconit" Class

Displacement:

ACONIT

A/S weapons:

2,700 tons standard (3,500 tons

full load)
Malafon surface-to-surface, 1
quadruple 305 mm, mortar, auto guided torpedoes, 2-3.9 inch anti-aircraft

Guns:

Displacement:

Dimensions:

General.

General

Provided for under the Second Five Year Plan. From their size and armament they might logically be described as frigates. But an official statement runs: "5 Corvettes—These ships will be primarily antisubmarine ships with advanced armament and sonar apparatus including variable depth sonar, bow sonar and Malafon system. The displacement full load of these ships will be near 3,500 tons."

Disposal

(Ex-Transport)

Disposal

The training cruiser Jeanne d'Arc, C 605 (completed in 1931) was decommissioned in 1964 when the new helicopter carrier La Résolue replaced her as training ship and took her name on 16 July 1964 (see photograph, drawings and full particulars in the 1964-65 and earlier editions). After being declassed she was temporarily used as a port depot ship and harbour accomodation vessel. comodation vessel.

EXPERIMENTAL GUIDED MISSILE

ILE d'OLERON (ex-München, ex-Mur)

3,280 tons standard (7.500 tons 350 (pp.), 377½ (o.a.)×50× 21½ feet

Machinery:

Oil fuel: Radius:

21½ feet M.A.N. 6-cyl. diesels. 1 shaft. B.H.P.: 3,500=14·5 kts. 340 tons 7,200 miles at 12 kts.: 5,900 miles at 14 kts. 195 (15 officer, 180 men) Complement:

General

Laurched in Germany in 1939. Taken as a war prize,
Formerly rated as a transport. Employed as accomodation vessel at Brest until converted into an experimental guided missiles ship in 1957-58 by Chantiers de Provence et l'arsenal de Toulon. Commissioned as a test bed early in 1959. Equipped with stabilisers.

Experimental

When converted she was designed for experiments with two launchers for ship to air missiles, the medium range "Masurca" and the long range "Masalca," and one launcher for ship to shore missiles, the "Malaface". Latterly fitted with one launcher for target planes. General



ILE d'OLERON

1966, A. & J. Pavia

Machinery:

Boilers:

Oil fuel: Radius: Complement: 1 A/S helicopter 1 launcher for "Malafon" A/S guided missile Geared turbines. 2 shafts. S.H.P.: 63,000=34 kts. (72.000 S.H.P. —38 kts. on trials light)

5,000 miles at 18 kts. 333 (20 officers and 313 men)

Pennant No. D 638

Builders Lorient Naval Dockyard Laid down

Launched 12 Mar. 1960

Completed July 1962

I Anti-Submarine (T 56) Type

2,750 tons standard (3,750 tons Displacement: full load) 422 (o.a.) $41\frac{2}{3} \times 16\frac{1}{2}$ (mean) $17\frac{1}{4}$ (max.) feet 2—3.9 inch automatic AA. in Dimensions: single mounts single mounts
1 anti-submarine helicopter (see
A/S weapons)
1 launcher for "Malafon" missiles (see A/S weapons)
6—21-7 inch ASM (2 triple)
1—12 inch (quadruple) ASM
mortar Aircraft: Guided weapons: Tubes:

A/S weapons:

General

General

Designed as a squadron escort and flotilla leader. She has extensive sonar and anti-submarine apparatus, including variable depth sonar and homing torpedoes. Particularly well developed anti-aircraft and radar equip-

800 tons

ment, T56 type. Same characteristics as regards hull and machinery as T 47 and T 53 R types, but different armament, She has a hangar and a platform for landing a helicopter. When first commissioned she was used as an experimental ship for new sonars and anti-submarine weapons.

Armament
She is fitted with French marks of guided missiles and was the first French combatant ship to be so armed. This is the reason for the two 3.9 inch guns instead of the 3 or 4 previously planned. As redesigned she was France's first operational guided missile ship.

Photographs
A photograph of La Gallssonniere as first completed appears in the 1962-63 edition, and a starboard bow view in the 1963-64 to 1965-66 editions.



GALISSONNIERE

1966, French Navy, Official

	Pennant No.	Builders	Laid down	Launched	Completed (commissioned)
DUPERRÈ	D 633	Lorient Naval Dockyard	Nov. 1954	2 July 1955	8 Oct. 1957
FORBIN	D 635	Brest Naval Dockyard	Aug. 1954	15 Oct. 1955	1 Feb. 1958
JAURÈGUIBERRY	D 637	F. C. Gironde	Sep. 1954	5 Nov. 1955	July 1958
LA BOURDONNAIS	D 634	Brest Naval Dockyard	Aug. 1954	15 Oct. 1955	Mar. 1958
TARTU	D 636	A. C. Bretagne	Nov. 1954	2 Dec. 1955	5 Feb. 1958

5 "Duperre" Class Aircraft Direction (T 53) Type

2.750 tons standard (3,750 tons Displacement:

Dimensions: Guns.

Tubes:

A/S weapons: Machinery:

2.750 tons standard (3,750 tons full load)
422 (o.a.)×41½×16½ (mean),
17½ (max.) feet
6—5 inch AA. (twin mounts),
6—2:5 inch (57 mm.) Bofors
AA.. 2 or 4—20 mm. AA.
6—21-7 inch ASM (two triple mountings) also able to launch ordinary torpedoes
New device of heavy hedgehog (sextuple Bofors lance roquettes howitzer)
2 Geared turbines, 2 shafts.
5.H.P.: 63.000=34 kts.
4 (500 lb./sq. in. pressure, 725 deg. F. superheat) in two boiler rooms separated by turbine compartments
700 tons
5,000 miles at 18 kts.
346 (20 officers and 326 men)
wers. Modified "Surcouf" Class or Boilers:

Oil fuel: Radius: Complement:

Radar Picket Destroyers. Modified "Surcouf" Class or "T 53 R" Type. Specially fitted as already " "T 53 R" Type. Specially fitted as aircraft direction and command ships. Radar equipment is more comprehensive and prominent than in the original "Surcouf" or "T 47"



LA BOURDONNAIS

1966, Dr. Giorgio Arra

Anti-Aircraft Type and gives them a different appearance. All authorised under the 1953 Programme. These vessels were classed as Escorteurs Rapides in 1953, but re-rated as Escorteurs in 1955. Latest electronic appliances provided. Names after famous sailors.

Constructional Hull entirely welded. Light alloys used extensively for

Gunnery
The 5 inch guns are able to use standard American ammunition.

Photographs
Photographs of Forbin appear in the 1958-59 to 1962-63 editions, of Duperré in the 1962-63 to 1965-66 editions, and a port broadside view of Tartu in the 1963-64 to 1965-66 editions.



TARTU

1966, French Navy, Official

Destroyers—continued

12	"Surcou	ıf'' Class
Bouvet Du Chayla Dupetit Thouars Kersaint	}	Rearmed with guided missiles
Cassard Chevaller Paul Surcouf	}	Converted to command ships
Casabianca D'Estrées Guépratte Maillé Brézé Vauquelin	}	Original anti-aircraft T 47 type to be converted to anti-submarine
Displacement:	2.750	tons standard 3.75

Casablanca
D'Estrées
Guépratte
Maillé Brézé
Vauquelln

Displacement:
Guépratte
Displacement:

Displacement:
Guil dod
Dimensions:
Guil de Missiles:
Guil de Missiles:
Tubes:

Tubes:

Machinery:

Displacement:

Guil de Missiles:
Tubes:

12—21 on A. (twin mounts), 6—57 mm. AA., 6—20 mm. AA.
See Guilded Missile notes
Tubes:

12—21 inch in four triple mountings (6 for ordinary and 6 for ASM homing torpedoes).
See Command notes

Machinery:
2 geared turbines:
3 Machinery:
2 geared turbines:
3 Machines:
4 (500 lb./sq. in. pressure, 725 deg. F. superheat)
Tool tons
Radius:
Complement:
General
Authorised under the 1949 to 1952 programmes.

General
Authorised under the 1949 to 1952 programmes.
Designed as Escorteurs Rapides Anti-aériens but rerated Escorteurs le Prèmiere Classe in 1951, Escorteurs
Rapides in 1953 and Escorteurs d'Escadre in 1955.
Named after famous French sailors.
Construction

Hull entirely welded, assembled from 84 prefabricated sections with a total weight of 1,100 tons. Light alloys used extensively for upperworks. Two boiler rooms alternate with two turbine compartments.

The semi-automatic 5 inch guns (a calibre then new in the French Navy) were chosen to facilitate shell supply so that they could use standard U.S. ammunition.

Guided Missiles

Bouvet, Du Choyla, Dupetit Thouars and Kersaint rearmed with single "Tartar" Mark 13 (40 missiles).

Command
Cassard, Chevaller Paul and Surcouf, refitted as flottila leaders, retained their 6—5 inch guns but only 4—57 mm AA. and 6 tubes for ASM torpedoes.
Conversion

Conversion

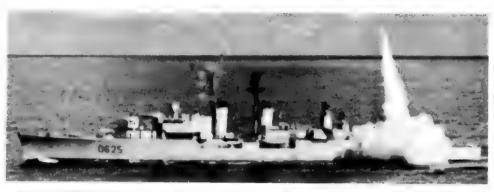
Since Jan. 1966 D'Estrées has been undergoing conversion into an anti-submarine vessel. She will be followed in order by Maillé Brézé, Casabianca and Guépratte. New armament: 2—3-9 inch AA., 1 Malafon missile launcher, 6 A/5 tubes (2 triple), 1 Bofors rocket launcher, variable depth sonar and bow sonar. Photographs

Photographs
A photograph of Vauquelin appears in the 1957-58 to 1962-63 editions. Guépratte in the 1959-60 to 1961-62 editions, Cassard in the 1962-63 to 1965-66 editions, and D'Estrées in the 1963-64 to 1965-66 editions

Name	Pennant No.	Builders	Laid down†	Launched	Completed
BOUYET CASABIANCA CASSARD CHEVALIER PAUL D'ESTRÉES DU CHAYLA DUPETIT THOUARS	D 624 D 631 D 623 D 626 D 629 D 630 D 625	Lorient Naval Dockyard A. C. Bretagne A. C. Bretagne F. C. Gironde Brest Naval Dockyard Brest Naval Dockyard Brest Naval Dockyard	June 1952 Oct. 1953 Nov. 1951 Feb. 1952 May 1953 July 1953 Mar. 1952	28 July 1953 27 Nov. 1954 27 Nov. 1954 4 Feb. 1954	4 May 1957 14 Apr. 1956 22 Dec. 1956 19 Mar. 1957 4 June 1957 15 Sep. 1956
GUÉPRATTE KERSAINT MAILLÉ BRÉZÉ SURCOUF VAUQUELIN	D 632 D 622 D 627 D 621 D 628	F. C. Gironde Lorient Naval Dockyard Lorient Naval Dockyard Lorient Naval Dockyard Lorient Naval Dockyard	Aug. 1953 Nov. 1951 Oct. 1953 July 1951 Mar. 1953	9 Nov. 1954 3 Oct. 1953 26 Sep. 1954 3 Oct. 1953 26 Sep. 1954	20 Mar. 1956

† Dates when assembly actually started on slip.

* Dates of entering service



DUPETIT THOUARS (firing guided missiles)

1966, French Navy, Official



DUPETIT THOUARS (missile launcher aft)

1966, Stefan Terzibaschitsch



CASABIANCA (anti-aircraft type)

1966, Dr. Giorgio Arra



DUAL PURPOSE FRIGATES (Rated as Avisos Escorteurs)

9 "Commandant Riviere" Class

	Launched	Completed
AMIRAL CHARNER	12 Mar. 60	Dec. 62
BALNY	17 Mar. 62	Mar. 63
COMMANDANT BORY	11 Oct. 58	66
COMMANDANT BOURDAIS	15 Apr. 61	Mar. 63
COMMANDANT RIVIÈRE	11 Oct. 58	Dec. 62
DOUDART DE LA GRÉE	15 Apr. 61	Mar. 63
ENSEIGNE HENRY	14 Dec. 63	Jan. 65
PROTET	7 Dec. 62	May 64
VICTOR SCHOELCHER	11 Oct. 58	Oct. 62

1,750 tons standard (2,200 tons full load)
321½ (pp.), 334 (o.a.)×37½×
12½ (mean) feet
3—3-9 inch single automatic
AA.; 2—30 mm. AA.
1 light helicopter can land aft
6—21 inch ASM
1—12 inch quadruple ASM and anti-shore mortar Displacement: Dimensions: Aircraft: Tubes: A/S weapons: Machinery:

nati-shore mortar
Diesels. 2 shafts. B.H.P.: 16,000
=25 kts. (see notes)
4,500 miles at 15 kts., 6,000
miles at 12 kts,
180 peace, 210 war (Commando unit of 80 can be carried) Radius: Complement:

General

All built under the 1956 and 1957 estimates by Lorient Naval Dockyard, Commandant Rivière started assembly on slip in Nov, 1956 and commissioned for preliminary sea trials on 1 Apr. 1959. Commandant Bory has Sigma free piston generators and gas turbines, Bolny will have gas turbines, and one shaft only. Others have four SEMT-Pielstick diesels coupled two by two on two shafts, Formerly classed as Escorteirs d'Union Francalse. Officially rerated as Avisos Escorteurs. on 1 Apr. 1959. Dual purpose type, designed to serve as avisos in peace and frigates in war. Commandant Bourdals commissioned as fishery protection ship for Newfoundand and Greenland im Mar, 1963. Victor Schoelcher acts as training ship. Photographs

Photographs of Commandant Rivière appears in the 1960-61 to 1964-65 editions, and of Doudart de la Grée In the 1964-65 and 1965-66 editions.



COMMANDANT BORY

1966, French Navy, Official



ENSEIGNE HENRY

1965, French Navy, Official

Launched Completed*

FRIGATES (Rated as Escorteurs Rapides) FAST

Pennant No. Programme

18 Oceangoing (A/S and AA.) Group 14 "Le Normand" Class

(E 52 Type)

1,295 tons standard (1,700 tons full load)
3117 (pp.), 3271 (o.a.)×331 Displacement: tull load)
3113 (pp.), 3271 (o.a.)×333
×10 feet
6—2·25 inch 57 mm. twin)
AA. (4 in L'Alsacien, Le Provencal, Le Vendéen), 2—20 mm.
AA. Dimensions: Guns: AA.
12 ASM (four triple mountings 12 ASM (four triple mountings aft) for homing torpedoes Heavy sextuple ASM Bofors mortar of hedgehog type forward (lance-roquettes); 2 D.C. mortars; 1 D.C. rack (see notes) Geared turbines, Parsons or Rateau, S.H.P.: 20.000=27 kts. (on trials they topped 29 kts.) 2 (500 lbs./sq. in. pressure, 725 deg, F, superheat) 4,500 miles at 15 kts. Tubes: A/S weapons: Machinery: Boilers: Radius:

200 Complement:

General
The E 52 a type have similar characteristics to the E 50 type as regards hull and machinery but are easily distinguished in that they have the ASM tubes aft and the heavy hedgehog or ASM howitzer forward while the E 50 type have the ASM torpedo tubes forward. L'Agenais, L'Alsacien, Le Béarnais, Le Provençal and Le Vendèen have a different arrangement of bridges. L'Alsacien, Le Provençal, and Le Vendéen have the Strombos-Velensi type modified funnel cap, and differ in armament, with a 12-inch quadruple mortar in place of the sextuple Bofors' howitzer and only 4—57 mm. AA, guns, AA, guns, Cancellation

Cancellation
The construction of the two frigates of the "E 52
b" type, which were to have been provided under the
1957 naval estimates, was abandoned.
Photographs

Photographs
A photograph of Le Gascon appears in the 1957-58 to 1959-60 editions, of Le Champenols in the 1957-58 edition, of L'Agenals in the 1958-59 and 1960-61 to 1963-64 editions, of L'Alsaclen in the 1960-61 to 1963-64 editions, of Le Bourguignon in the 1962-63 and 1963-64 editions, and of Le Savoyard in the 1964-65 and 1964-65 fee editions

1963-64 editions, and of Le Savoyard in the 1964-65 and 1965-66 editions.
Disposals of ex-British "River" type
Of the "L'Aventure" class, La Decouverte (ex-H.M.S. Windrush was condemned in May 1961, and La Croix de Lorraine (ex-H.M.S. Strule, ex-Glenarm), L'Allette (ex-L'Escarmouche, ex-H.M.S. Frome) and La Confiance (ex-Tonkinois, ex-H.M.S. Malaya) in Sep. 1961. L'Aventure was withdrawn from service on 15 Dec. 1961. La Surprise was sold to Morocco in June 1964. Disbosals of Colonial Sloop Type
Of the three frigates of the colonial sloop type, rated as Avisos, Grandiere was scrapped in 1959, Dumont d'Urville in 1958, and Savorgnan de Brazza in 1955.

LE NORMAND	F 765	1952	F. Ch. de la Mediterranee	July 53	13 Beb. 54	3 Nov. 56
LE LORRAIN	F 768	1952	F. Ch. de la Mediterranee	Feb. 54	19 June :54	
LE PICARD	F 766	1952	A, C. Loire	Nov. 53	31 May 54	20 Sep. 56
LE GASCON	F 767	1952	A. C. Loire	Feb. 54	23 Oct. 54	29 Mar. 57
LE CHAMPENOIS	F 770	1952	A. C. Loire	May 54	12 Mar. 55	1 June 57
LE SAVOYARD	F 771	1952	F. Ch. de la Mediterranee	Nov. 53	7 May 55	14 June 56
LE BOURGUIGNON	F 769	1952	Penhoët	Jan. 54	28 Jan. 56	11 July 57
LE BRETON	F 772	1953	Lorient Navy Yard	June 54	2 Apr. 55	20 Aug. 57
LE BASQUE	F 773	1953	Lorient Navy Yard	Dec. 54	25 Feb. 56	18 Oct. 57
L'AGENAIS	F 774	1954	Lorient Navy Yard	Aug. 55	23 june 56	14 May 58
LE BEARNAIS	F 775	1954	Lorient Navy Yard	Dec. 55	23 June 56	18 Oct. 58
L'ALSACIEN	F 776	1955	Lorient Navy Yard	July 56	26 Jan. 57	27 Aug. 60
LE PROVENCAL	F 777	1955	Lorient Navy Yard	Feb. 57	5 Oct. 57	6 Nov. 59
LE VENDÈEN	F 778	1955	F. Ch. de la Mediterranee	Mar. 57	27 July 57	1 Oct. 60

Builders

* Dates of commissioning, after completion of trials.

Laid down



LE BRETON

1966, Wright & Logan



LE VENDÉEN

1964. French Navy, Official

Fast Frigates (Rated as Escorteurs Rapides)—continued

18 Oceangoing Group-contd. 4 "Le Corse" Class (E 50 Type)

1,290 tons standard, 1,528 tons for trials (1,702 tons full load) 3113 (pp.), 327½× (o.a.)×33½ ×10 feet 6—2:25 inch (57 mm). AA. (twir mounts) 2—20 mm. AA. 2 mortars, 1 D.C. rack, 1 sextuple lance-roquettes 12 ASM tubes (four triple) for homing torpedoes, E 50 type have ASM tubes forward Geared turbines, Parsons or Rateau, S.H.P.: 20,000=27 kts. (Bordelais, 29:5 kts. on trials) 2 (500 lbs./sq. in. pressure, 725 deg. F, superheat) 4,500 miles at 15 kts. Displacement: 1,290 tons standard, 1,528 tons Dimensions: Guns:

A/S weapons: Tubes:

Machinery: Boilers:

Radius: Complement:

General Intended as seagoing convoy escort vessels with a large radius of action. Designed as Escorteurs Rapides Anti-Sousmarins, Re-rated as Escorteurs de Deuxième Classe in 1951, as Escorteurs in 1953, and as Escorteurs Rapides in 1955. First four laid down are E 50 type, remainder E 52 type. Le Bordelals has Strombos-Velensl type modified furmel cap. Le Brestols has similar mainmast to that in Provençal.

Le Brestois had a single 3.9 inch automatic AA, gun mounted in place of the after twin mounting for experimental purpose, and after her refit completed in 1963 she ratains this mounting.

Status

Le Boulonnals and Le Corse were placed in normal reserve status on 1 Dec. 1964, it is officially stated.

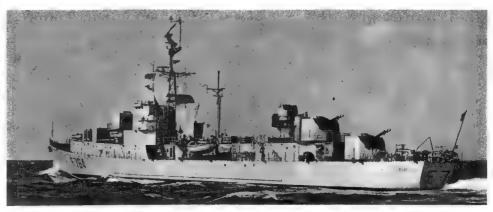
Photographs
Photographs of Le Boulonnals appear in the 1956-57,
1957-58, 1963-64, 1964-65 and 1965-66 editions, of
Le Corse in the 1955-56 to 1957-58 editions, and
of Le Bordelals in the 1957-58 to 1962-63 editions.

Laid down Pennant No: Builders Programme 1950 Launched Completed Launched Completed
11 July 53 7 Apr. 55
12 May 53 5 Aug. 55
16 Aug. 52 19 Jan. 56
5 Aug. 52 15 Apr. 55 F. Ch. de la Mediterranee A. C. Loire Lorient Navy Yard Lorient Navy Yard LE BORDELAIS LE BOULONNAIS LE BRESTOIS LE CORSE May 52 Mar. 52 Nov. 51 F 763 F 762 F 761 1950 Oct.



LE CORSE

1966, Stefan Terzibaschitsch



LE BORDELAIS

FRIGATES

1966, French Navy, Official

(Rated as Avisos) Ex-Escorteurs

Ex-U.S. Destroyer Escort Type "Arabe" Class

1,300 tons standard (1,650 tons full load) 300 (pp.), 306 (o.a.)×36½×10½ feet Displacement: Dimensions Malgache: 2—3 inch; 6—40 mm. AA.; 14—20 mm. AA. Somali: Guns removed (see Experimental, notes)
Diesel electric drive. 4 General Electric diesels. 2 electric motors.
2 shafts. B.H.P.: 6,000=19 kts. economical speed 12 kts.)
300 tons
11,500 miles at 11 kts., 5,500 at 19 kts.
150 peace, 185 war Guns: Machinery: Oil fuel: Radius

Complement:

General Somali is the sole survivor of the first group of six ships acquired from the United States in 1944. These were formerly rated as Torpilleurs d'Escorte, but rerated Escorteurs de Deuxieme Classe in 1951. Six more DEs of this "Bostwick" class were transferred from the U.S.A. in Mar. 1950 under the Atlantic Pact. Two more including Malgache were transferred from the U.S.A. on 29 Mar. 1952, at Brooklyn, All re-rated as Escorteurs in 1953 and as Avisos in 1964.

Amphiblous Malgache is now command ship at the Amphibious Training Centre (C.I.O.A.) at Lorient. She no longer carries any anti-submarine armament,

Experimental Somall was converted into an experimental vessel in 1956 and her armament landed, her pennant number subsequently being changed from F 703 to A 607.

Photographs A photograph of Somall with F pennant number appears in the 1957-58 to 1959-60 editions.

Disposals
Sister ships Hova (ex-DE 110), Marocain (ex-DE 109)
and Tunislen (ex-Crosley, DE 108) of the 1st Group,
and Arabe (ex-Samuel S. Miles, DE 183), Berbère (exClarence L. Evans, DE 113) and Sakalave (ex-Wingfield,
DE 194) were officially stricken from the list in 1960.
Olse (ex-Algérien, ex-Cronin, DE 107) and Yser (exSénégolais, ex-Corbesier, DE 106) of the 1st Group,
and Ambara (ex-Swearer, DE 186), Kayble (ex-Riddle,
DE 185), Soudanais (ex-Cates, DE 763) and Touareg
(ex-Bright, DE 747) were officially deleted from the
list in 1965.

Name

Pen. No.

Builders

Launched Completed

MALGACHE (ex-U.S.S. Baker, DE 190) SOMALI (ex-U.S.S. DE 111)

F 724 Federal S.B. & D.D. Co. 28 Nov. 43 23 Dec. 43 A 607 Dravo Corporation, Wilmington, Del. 12 Feb. 44 9 Apr. 44



MALGACHE

1964, Stefan Terzibaschitsch



SOMALI

1965, French Navy, Official

Ex-FRIGATES (Rated as Avisos Hydrographes)

2 "Beautemps-Beaupre" Class

1,327 tons standard (2,000 tons Displacement:

1,327 tons standard (2,000 tons full load)
311½×38½×10½ feet
1.—4·1 inch, 2.—40 mm. AA.
4.—20 mm. AA.
5ulzer diesels. 2 shafts. B.H.P.:
4,200=16 kts.
230 to 240 tons
7,000 miles at 15 kts.: 12,000 miles at 10 kts.
152 (12 officers and 140 ratings) Dimensions:

Machinery.

Oil fuel.

Radius:

Complement: General

General Originally rated as Avisos Coloniaux Hydrographes. Re-rated as Escorteurs de Deuxième Classe in 1953, as Avisos Escorteurs 11 Aug. 1953, and as Avisos in 1955. Used as survey ships (Bôtiments Hydrographes), and officially re-rated as such in 1966.

Gunnery
The 4-1 inch guns are of the German 105 mm, model. Photographs

A photograph of *La Pérouse* appears in the 1955-56 1963-64 editions.

Laid down 1940 1940 Completed 8 May 1947 23 Apr. 1947 Launched 1941 1941 Pennant No. Builders BEAUTEMPS-BEAUPRÉ (ex-Sans Souci) A 752 (ex-F 751) LA PÉROUSE (ex-Sons Peur) A 753 (ex-F 750) Penhoët Penhoët



BEAUTEMPS_BEAUPRE

1964, French Navy, Official

I "Commandant Robert Giraud" Class

1,000 tons standard (1,380 tons full load) 239 (pp.), 256 (o.a.)×36×12 Displacement:

Dimensions: feet Guns:

feet
1.4-1 inch, 2.40 mm, AA.,
2.20 mm, AA.
4 MAN diesels, 2 shafts,
B.H.P.: 8,800=20-5 loss. Machinery:

Oil fuel: 236 toms 4,000 miles at 18 kts.; 7,800 Radius:

miles at 12 kts.

Complement:

General
Former dépanneur d'hydravions, ex-German aircraft tender. Transferred by Great Britain in Aug. 1946, with Commandant Robert Giraud. Re-rated as Escorteur de Deuxième Classe early in 1953, as Aviso Escorteur on 11 Aug. 1953 and as Aviso in 1955. Formerly used as patrol and escort vessel, support gunboat and carrier for commandos, but used as a bâtement océanographe since 1965, and officially re-rated as a survey ship in 1966.

The four diesels are coupled two by two by hydraulie.

The four diesels are coupled two by two by hydraulic trammission on two shafts.

Sister ship Commandant Robert Glraud was reclassified as a gabare (boom defence vessel) in 1963 and is listed on a later page.

PAUL GOFFENY (ex-German Max Stinksy)

Pennant No. A 754 (ex-F 754)

Norderwerft. Hamburg

1940

Completed Aug. 1941



PAUL GOFFENY

Disposals of Corvettes (Avisos)
The three corvettes of the Later "Chamois" Class,
Bisson, Commandant Amyot D'Inville and Commandant
De Pimodan were officially stricken from the list in

Of the three corvettes of the Early "Chamois" Class, Chamols was transferred to the Royal Moroccan Navy on 7 Nov. 1961 and renamed El Lahiq, Gazelle was condemned in Mar. 1961, and Chevreull was transferred

Added 1964, French Navy, Official

to the Tunisian Navy on 13 Oct 1959 and renamed Dustur.

Of the nine corvettes of the "Elan" Class, La Moqueuse was officially stricken from the list in 1965, La Capricleuse was scrapped in Dec. 1963, Commandant Delage, Commandant Dominé (ex-La Rieusse) and Commandant Duboc in 1961, Elan, La Boudeuse and La Gracleuse in 1958, and Commandant Bory in 1953.

COMMAND SHIP (Batiment de Commandement)

Ex-German Type

GUSTAVE ZÉDÉ (ex-Saar) A 641

Displacement:

Dimensions:

ar) A 641
2.895 tons standard (3,230 tons full load)
308*44! > 14 feet
3—41 inch, 4—40 mm. AA.,
8—20 mm. AA.
2 sets Krupp diesels. 2 shafts.
B.H.P.: 3,700 16 kts.
336 tons
9,400 miles at 11 kts:
364

Machinery:

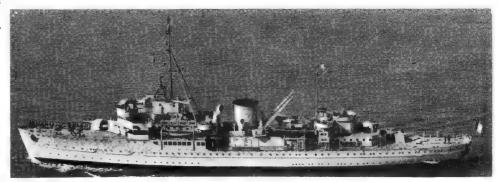
Fuel: Radius: Complement:

General

General

Former German submarine school depot ship, built
by Krupp-Germania and launched on 5 Apr. 1934.
Acquired from the U.S. Navy in Oct. 1947. Recommissioned in 1949 as a Rovitailleur-pour-Sousmarins
(Submarine Depot Ship). Alterations were made to
the bridge and foremast in 1952. Formerly Flagship of
the 3rd F.E.R. (3e flotille d'escorteurs rapides) or
Groupe d'action anti-submarine (Anti-submarine
Group). Now Flagship of the Fleet Training Centre.
Disbosols Disposals

The submarine depot ship Jules Verne, latterly fleet repair and port depot ship, was scrapped in 1960.



GUSTAVE ZEDE

1966, French Navy, Official

ASSAULT LANDING SHIPS

(Transports de chalands de debarquement)

ORAGE TCD 2 Displacement:

5,800 tons light, 8,500 tons full load (15,000 tons when fully immersed) 489×701×15 feet (281 feet

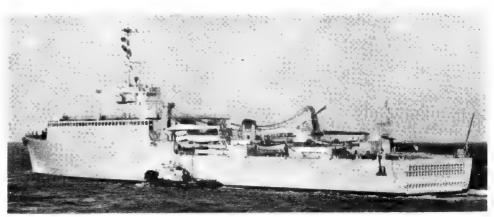
Dimensions: max.) 6-30 mm. AA., 2-4.7 inch Guns:

mortars Machinery:

mortars
2 diesels. 2 shafts. B.H.P.: 8,000
=17 kts.
8,000 rautical miles at 15 kts.
341 (14 officers and 327 men) Radius: Complement: General

General

Built at Brest Dockyard, Ouragan was laid down in June 1962, launched on 9 Nov. 1963, completed for trials in 1964, and commissioned in Jan. 1965. Bridge is on the starboard side. Fitted, beside landing craft, with heavy helicopters. Able to carry EDICs loaded with elever light tanks each, or 18 loaded LCMs, also 1,500 tons of material and equipment handled by two 35 tons cranes. Allocated to the Pacific Nuclear Experimental Centre as Orage will be, on completion. She will be similar to Ouragan except for the weapons which will not be fitted, it is officially stated. To be commissioned in Mar. 1968.



OURAGAN

1966, French Navy, Official

LANDING SHIP DOCK

I Ex-U.S. LSD

FOUDRE (ex-Greek Okeanos, ex-British Oceanway, ex-US, LSD 12)

Displacement: Dimensions:

4.500 tons standard (7,930 tons full load)
457} (o.a.)×72×18 feet
1—4·1 inch, 2—4·7 inch mortars, 4—40 mm. AA., 4— Guns:

20 mm. AA. Turbine, 2 shafts. H.P.: 7,400=17 kts. Machinery:

Boilers: Radius:

8,000 miles at 15 kts. 212 (12 officers, 200 men) Complement:

General General
Built by Newport News S.B. & D.D. Co. Launched on 29 Dec. 1943, Transferred
by the United States to Great Britain in 1944, Acquired by Greece from whom she
was purchased by the U.S. in 1952 and transferred to France under MDAP.
Pennant No. A 646.



OCEAN MINESWEEPERS (Dragueurs Oceaniques)

15 U.S. MSO (ex-AM) Type

"Berneval" Class

BIR HACHEIM (ex-AM 451) MYTHO (ex-AM 475)
CANTHO (ex-AM 476)
COLMAR (ex-AM 514)
DOMPAIRE (ex-AM 454)
GARIGLIANO (ex-AM 452)
VINH LONG (ex-AM 477) ALENCON (ex-AM 453) AUTUN (ex-AM 502) BACCARAT (ex-AM 505) BERLAIMONT (ex-AM 500) BERNEVAL (ex-AM 450)

700 tons standard (795 tons full load) 165 (w.l.), 171 (o.a.)×35×10} feet 1—40 mm. AA. Displacement: Dimensions: Guns:

1—40 mm. AA.
2 General Motors diesels. 2 shafts, B.H.P.: 1,600=
13.5 kts. (designed), 14 kts. on trials.
3,000 miles at 10 kts. Machinery:

Complement:

General General
The U.S.A. agreed in Sep. 1952 to transfer to France in 1953 eight new AM, and four more in 1954. Three more were transferred in 1956. Bir Hachelm was transferred in Feb. 1954, Garigliano was transferred in Apr. 1954 and Vinh Long in 1955. Origny was launched on 25 Feb. 1955. Autun on 6 May 1955, Baccarat on 6 Aug. 1955 and Berlaimont on 7 Jan. 1955.

Appearance Autun, Baccarat, Berlaimont, Colmar, Narvick, Origny and Oulstreham are somewhat different from the others and have a taller funnel.

Class Variations

Class variations
Origny is now classified and fitted as an oceanographic research vessel but is Navy
owned and mamned.

Photographs

Photographs

An aerial port quarter view of Garigliano appears in the 1955-56 edition, a broadside surface view of Alençon in the 1956-57 to 1958-59 editions, a starboard bow view of Narvick in the 1959-60 edition, and a port broadside view of Vinh Long in the 1960-61 to 1963-64 editions.



BERNEVAL (short funne) type)

1964, Stefan Terzibaschitsch



COLMAR (tall funnel type)

1962. Stefan Terzibaschitsch

COASTAL MINESWEEPERS (Dragueurs Côtiers)

34 British Type. "Sirius" Class PEGASE (21 June 55)
PERSEE (23 May 55)
PHENIX (23 May 55)
PHENIX (16 July 54)
POLLUX (16 July 54)
PROCYON (12 Dec. 54)
REGULUS (18 Nov. 52)
RIGEL (13 May 53)
SAGITTAIRE (12 Jan. 55)
SIRIUS (6 Occ. 52)
VEGA (14 Jan. 53)
VERSEAU (26 Apr. 56)

CASTOR (19 Nov. 53)
CENTAURE (8 Mar. 55)
CÉPHÉE (3 Jan. 56)
CROIX DU SUD
(13 June 56)
DÉNÉBOLA (12 July 56)
ERIDAN (18 May 54)
ETOILE POLAIRE
(5 Mar. 57)
FOMALHAUT
(24 Apr. 55)
LYRE (3 May 56)
ORION (20 Nov. 53)
365 tons standard (424 ACHERNAR (12 Aug. 54)
ALDÉBARAN (27 June 53)
ALGOL (15 Apr. 53)
ALTAIR (27 Mar. 56)
ANTARÉS (21 Jan. 54)
ARCTURUS (12 Mar. 54)
ARIES (13 Mar. 56)
BELLATRIX (21 July 55)
BÉTELGEUSE (12 July 54)
CANOPUS (31 Dec. 53)
CAPELA (6 Sep. 55)
CAPRICORNE (8 Aug. 56)
CASSIOPÉE (16 Nov. 53)

Machinery:

Displacement: Dimensions:

ORION (20 Nov. 53)
365 tons standard (424 tons full load)
140 (pp.), 152 (o.a.)×28×8½ feet
1—40 mm. Bofors AA., 1—20 mm. Oerlikon AA.
(Several have 2—20 mm. AA,
5.1.G.I4.A. free piston generators and Alsthom or
Rateau-Bretagne gas turbines or SEMT-Pielstick 16-cyl,
fast diesels. 2 shafts., B.H.P.: 2,000=15 kts. (11.5 kts.
when sweeping)

48 tons

Oil fuel: Radius 3,000 miles at 15 kts. Complement:

General

Of wooden and aluminium alloy construction. Launch dates above. Of same general characteristics as the British "Coniston" class, but of different hull construction. Propelled by Alsthom or Rateau gas turbine wth S.I.G.M.A. free piston generator, except Altair, Arcturus, Aries, Bételgeuse, Canopus, Capella, Capricone, Céphée, Croix du Sud, Etoile Polaire, Lyre, Phénix and Versear, which have Pielstick-SEMT light diesels. Similar to those built in Great Britain and the Netherlands of which the plans were basically similar for all. The original design of this type of craft was developed in close collaboration with John I. Thornycroft & Co. Ltd. Southampton and the Royal Navy. 16 of these vessels were built under the "off-shore" procurement programme. Altair, Arcturus and Croix de Sud have been station-ships in the West Indies since 1960. D 25, D 26 and D 27 were allocated to Yugoslavia. Photographs **Photographs**

A large starboard bow view of Régulus appears in the 1957-58 to 1959-60 editions, and a starboard broadside view of Vega in the 1954-55 to 1963-64 editions.



ALTAIR

Dimensions: Guns: Machinery:

1964 Admiral M. Adam

30 U.S. MSC (Ex-AMS) Type. "Acacia" Class

ACACIA (ex-AMS 69) COQUELICOT (ex-AMS 84) LISERON (ex-AMS 98)
ACANTHE (ex-AMS 70) CYCLAMEN (ex-AMS 119) LOBELIA (ex-AMS 96)
ACONIT (ex-AMS 66) EGLANTINE (ex-AMS 117) MAGNOLIA (ex-AMS 87)
AJONC (ex-AMS 71) GARDÉNIA (ex-AMS 114) MARQUERITE (ex-AMS 94)
AZELÈE (ex-AMS 67) GIROFLEE (ex-AMS 85) MIMOSA (ex-AMS 99)
BEGONIA (ex-AMS 116) GLYCINE (ex-AMS 120) MUGUET (ex-AMS 97)
BEGONIA (ex-AMS 116) GLYCINE (ex-AMS 118)
CAMÉLIA (ex-AMS 68) JACINTHE (ex-AMS 115)
CHRYSANTHEME LAURIER (ex-AMS 86) PRVENCHE (ex-AMS 141)
CHRYSANTHEME LAURIER (ex-AMS 93)

LILAS (ex-AMS 93)

RENONCULE (ex-AMS 126)

RÉSEDA (ex-AMS 126) ons full load) RESEDA (ex-AMS 126)
370 tons standard (405 tons full load)
136½ (pp.), 141 (o.a.)×26×8⅓ feet
2—20 mm. AA.
2 General Motors diesels. 2 shafts. B.H.P.: 1,200=
13 kts. (8 kts. when sweeping)
40 tons
2 500 miles as 10 kts.

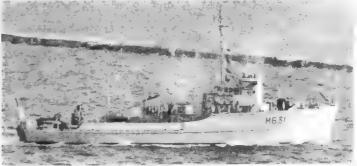
Oil fuel: 2.500 miles at 10 kts. 38 (3 officers, 35 men) Radius: Complement:

Complement: 38 (3 officers, 35 men)

The U.S.A. agreed in Sep. 1952 to allocate to France in 1953, 36 new AMS (later re-designated MSC) under the Mutual Defence Assistance Programme, but only 30 were finally transferred to France in 1953-55. Three were returned to the U.S.A. after delivery to Saigon for Indo-China, and two of these were allocated to Japan (AMS 95 and 144). Thr.ee (AMS 139, 140, 143) were not delivered, having been allocated to Spain, Auxiliary motor minesweepers constructed throughout of wood or other materials with the lowest possible magnetic attraction to attain the greatest possible safety factor when sweeping for magnetic mines. All named after flowers. Building Building

anding and the United States in 1951-54. Acacia was launched on 28 Mar. 1953, conit on 27 Mar. 1953, and Azalée on 9 June 1953. Aconit on 2 Photographs

A larger port broadside view of Coquelloot appears in the 1954-55 to 1959-60 editions, and a starboard view of Pervenche in the 1961-62 to 1964-65 editions.



PAVOT

1965, courtesy Dr. Glorgio Arra

Coastal Minesweepers—continued

I Special Type

MERCUIRE

333 tons light, 362 tons normal (380 tons full load)
137\frac{1}{2} (pp.), 145\frac{1}{2} (o.a.)\times 27\times 8\frac{1}{2} feet
2-20 mm. AA
2 Mercedes-Benz diesels. 2 shafts. Kamewa variable pitch
propellers. B.H.P.: 4,000=15 kts.
48 tons Displacement; Dimensions:

Gune Machinery:

Oil fuel:

Radius: Complement: 3,000 miles at 15 kts.

Construction Construction
Ordered in France from Mécaniques de Normandie (who have built six sister ships
for the Federal German Navy) under the "off-shore" programme, Laid down in Jan,
1955. Launched on 21 Dec. 1957. Completed in Dec. 1958. Somewhat different from
the "Sirius" class and with the same method of construction as the United Statesbuilt "Acacia" class. Stated to be a very successful model.



MERCURE

courtesy M. Henri Le Masson

6 Ex-Canadian "Bay" Type

"La Dunkerquoise" Class

LA BAYONNAISE (ex-Chignecto)
LE DIEPPOISE (ex-Chaleur)
LA DUNKERQUOISE (ex-Fundy) LA LORIENTAISE (ex-Miramchi)
LA MALOUINE (ex-Cowichan)
LA PAIMPOLAISE (ex-Thunder)

Displacement:

390 tons standard (412 tons full load)
140 (pp), 152 (o.a.)×28×83 feet
1—40 mm. AA.
General Motors diesels. 2 shafts. B.H.P.: 2,400=16 kts. Guns: Machinery:

(max.),

Oil fuel:

52 tons Radius:

4,500 miles at 11 kts. 43 (4 officers, 39 men) Complement:

General

General

La Bayonnaise (launched on 12 May 1952) La Malouine (launched on 12 Nov. 1951) and La Paimpolaise (launched 17 July 1953) were transferred to the French flag at Halifax on 1 Apr. 1954, La Dunkerquoise (launched in Apr. 1953) on 30 Apr. 1954, and La Dieppoise (launched on 21 June 1952 and La Lorientoise (launched in 1953) on 10 Oct. 1954. All similar to the "Bay" class im the Royal Canadian Navy. La Bayonnaise and La Dunkerquoise left Brest in Apr. 1961 for the Pacific to relieve Lotus and Tiare in New Caledonia and Tahiti, respectively. La Dieppoise is at Dipbouti, La Malouine is at Diego Saurez, and La Lorientoise and La Paimpolaise are in New Caledonia and Tahiti, respectively.

As these ships are used on "colonial" service they have been air conditioned.



LA DUNKEROUOISE

courtesy M. Henri Le Masson

DIVING TENDER (Batiment de Récherches Sous Marines

INGÉNIEUR ÈLIE MONNIER (ex-German trawler Albatros)

280 tons standard (350 tons full load) $111\frac{1}{2}\times24\times10$ feet Displacement:

Dimensions:

Machinery: Diesel. 1 shaft. Speed: 12 kts. 1,500 miles

Range: Complement:

General Former German trawler, Built by D. W. Kremer Schiffwert Elmshom in 1944. Fitted for ocean research. Photograph in the 1957-58 to 1961-62 editions.

PORT DEPOT SHIPS

General
Former battleships, cruisers, etc., now obsolete, are classed as port depot ships:—
There are the battleships fean Bart at Toulon and Richelieu at Brest, the heavy cruiser Ocean (ex-Suffren) at Toulon, the light cruiser Montcalm at Toulon, all used as barracks; and the former aircraft carrier Béarn hulls at Toulon. Also the flotilla leaders (ex-light cruisers) Chateaurenouit and Guichen, and a number of other ships including Voltigeur.

PATROL VESSELS (Escorteurs Côtiers)

14 "Le Fougueux" Class

L'ETOURDI (5 Feb. 1958)
LE FOUGUEUX (31 May 1954)
LE FRINGANT (6 Feb. 1958)
LE FRONDEUR (26 Feb. 1959)
LE HARDI (17 Sep. 1958)
L'INTRÉPIDE (12 Dec. 1958)
L'OPINIATRE (4 May 1954) L'ADROIT (6 Sept. 1958) L'AGILE (26 June 1954) L'ALERTE (5 Oct. 1957) L'ATENTIF (10 July 1958) L'ARDENT (17 July 1958) L'EFFRONTÉ (27 Jan. 1959) L'ENJOUE (5 Oct. 1957)

Displacement: Dimensions: Guns:

325 tons standard (400 tons full load)
170 (pp.)×23×6} feet
2—40 mm. Bofors AA., 2—20 mm. AA.
1 hedgehog, 4 D.C. mortars (and 2 D.C. racks), Sonar in L'Agile, Le Fouguex, L'Opiniatre; others have a new 120 mm. ASM mortar forward, 2 D.C.T., 1 D.C. rack A/S weapons:

Machinery:

rack
L'Intrépide has a tube mounted on the stern
4 Pielstick-SEMT light and fast diesel engines coupled
2 by 2: B.H.P.: 3,240=18-7 kts., 22 kts. on trials)
3,000 miles, at 12 kts., 2,000 miles at 15 kts.
62 (4 officers, 58 men)

Complement:

General
L'Agile, Le Fougueux and L'Opiniatre were built in France under a U.S.A. offshore order. Five more were built under the 1955 and six under the 1956 estimates. These have a different armament, slightly different appearance, and modified bridge. Le Hardi is employed on fishery protection duties in the North Islands. Orkney and Nor-Sea, English Channel, Bristol Chamnel, off Shetland way. Photographs

Photographs of Le Fougueux appear in the 1956-57 and 1957-58 editions, and of L'Opinatre in the 1958-59 and 1959-60 editions.



L'ADROIT

Tubes:

Added 1960, French Navy, Official

LA COMBATTANTE

182 tons standard (201 tons full load) Displacement:

Dimensions:

Guns: Guided weapons:

182 tors standard (201 tons full load)

147½×24½×6½ feet

1—40 mm. AA.

1 rocket launcher for SS 11

2 SEMT-Pielstick diesels. 2 shafts. Variable pitch propellers. B.H.P.: 3,200=23 kts.

2,000 miles at 12 kts. Machinery:

Radius:

General Complement: General
Prototype of a new series of patroullleurs garde-côtes or light patrol vessels.
Authorised under the 1960 Programme. Built by Construction Mécaniques de
Normandie, Laid down in Apr. 1962, launched on 20 June 1963, and completed
on 1 Mar. 1964. Of wooden and plastic laminated non-magnetic construction.

Disposals

Hussard (ex-PC 1235), the sole survivor of a numerically large class of former

United States submarine chasers, was officially deleted from the list in 1965. Dague
(ex-PC 1561) was scrapped in 1963. For disposals and transfers of this type, known
in the French Navy as the "Carabinier" Class, formerly rated as Escorteurs, but
subsequently reclassified as Patroullleurs, see the 1961-62 edition.



LA COMBATTANTE

1964, French Navy, Official

PATROL LAUNCHES (Chasseurs de Sousmarins)

2 Ex-U.S. SC Type

M 691 (ex-CH 101, ex-SC 524) P 706 (ex-CH 135, ex-SC 1030)

110 tons standard (138 tons full load) $107\frac{1}{2}$ (w.l.), $110\frac{5}{8}$ (o.a.)× $18\frac{3}{2}$ × $6\frac{1}{2}$ feet 2 G.M. diesels, 2 shafts. B.H.P.: 1,000=15 kts. Displacement: Machinery:

Disposals

Of wooden construction, Launched in 1943, Acquired from the U.S.N. in 1944. Formely rated as Submarine Chasers, but re-rated as patrol vessels in 1951. P 690, 691, 695, 696, 697, 711, 713, 714, 715 were converted into inshore minesweepers in 1954, but were discarded as such in 1958-59, although Nos. 690 and 691 still exist but as auxiliaries and not on the Navy list of fighting vessels.

Disposals
P 731 was scrapped in 1956 and sister ship P 736 was given back to United States Navy in 1956. P 704 was scrapped in 1957 and P 701 was condemned in 1958. P 702 was scrapped in 1959. M 714 was withdrawn from active service on 1 Oct. 1961 and M 711 on 1 Jan. 1962. No. 732 was deleted from the list in Mar. 1963. P 696. P 703 and P 713 were condemned in 1964. Nos. 690, 694, 709, 178, 722 and 724 are used as hulks or vedettes without armament for auxiliary purposes.
M 691 is a buoyage vessel, P 706 is an accommodation vessel for diver teams (converted in 1959 and 1960). Transfers

P 699 was transferred to the Ivory Coast Republic and re-named Patience and P 700 was transferred to the Senegalian Republic and re-named Senegal.

MAINTENANCE SHIPS

5 Logistic Support Type

A GARONNE Repair Worlshop (Bâtiment de soutien logistique, version Ateller) A LOIRE Minesweeper Support (Bâtiment de soutien logistique, version Dragueurs A RANCE Damage Control (Bâtiment de soutien logistique, version Sécurité) E RHIN Electronic Service (Bâtiment de soutien logistique, version Électronique)

Alouette helicopters

2 Alouette helicopters

2 Alouette helicopters

2 Personnel (LCP)

Machinery: 2 SEMT-Pielstick diesels. 1 shaft. B.H.P.: 3,300=16 kts. 6,000 miles at 12 kts.

Complement: 71 (5 officers, 66 men) plus circa 100 technicians, except Garonne 221 (10 officers, 211 men)

All these maintenance and logistic support ships have the same basic characteristics, hull and machinery, differing only in their respective specialisation, except Garonne which has one more deck, larger workshops and a heavier displacement of 2,320 tons standard, as a repair ship for the Pacific Nuclear Experimental Station (CEP), and La Rance, radiological security ship (radioactive decontamination) with extended bridge and different silhouette and hangar for three helicopters. All were build by Lorient Dockyard.

Name Pennant No. Programme Laid down Launched Completed La Garonne A 617 1963 Nov. 1963 8 Aug. 1964 1 Septiment 1964 La Rance A 618 1963 Aug. 1964 5 March 1964 La Rance A 618 1963 Aug. 1964 5 March 1966 La Rance A 618 1963 Aug. 1964 5 March 1966 La Rhin A 621 1959 May 1961 Le Rhin A 621 1959 May 1961



LA GARONNE

1966, French Navy, Official

MAINE (ex-El Monsour) A 611

Displacement: Measurement: 5,420 tons 5,818 tons gross, 1,320 tons deadweight 399½×53¾×18 feet

Dimensions:

Machinery: 2 Parsons turbines. 2 shafts. S.H.P.: 7,500=15 kts. 2 (2 landed) 115 (9 officers and 106 men)

Complement:

(ex-Sidi Ferruch)
Displacement: A 612 4,430 tons MEDOC

Measurement: Dimensions:

3,988 tons gross $372\frac{1}{4}\times49\frac{1}{4}\times23$ feet 2 Rateau turbines, 2 shafts. S.H.P.: 4,750=15 kts. Machinery:

Boilers: 2 MORVAN (ex-Sidi Mabrouk) A 613

Displacement: Measurement: Dimensions:

k) A 613 4,090 tons 3,760 tons gross 371½×51×23½ feet 2 Parsons turbines, 2 shafts, S.H.P.: 4,600=15 kts. Machinery: Boilers:

Boilers: 2

General

These three passenger vessels designed and built for Algeria by F. C. Medit. (22 Oct. 32) Maine, Bretagne/Loire (14 May 1949) Medoc, and J. S. White (22 Apr. 1948) were purchased in Sep. 1963 and fitted out as barrack and accommodation ships for the maintenance of the Nuclear Establishment of Polynesia, the experimental base in the Pacific where they are manned by naval Personnel. A photograph of Maine appears in the 1965-66 edition.

MAURIENNE (ex-M/S Brazza) A 637

8,700 tons standard (9,100 tons full load)
9,065 tons gross, 5,946 tons deadweight
480 (o.a.)×62×22½ feet
2 Doxford diesels, 2 shafts B.H.P.: 8,800=17.5 kts. Displacement: Measurement:

Dimensions:

Jimensions. Machinery: General

Former motor passenger ship of the Chargeurs Réunis (West Africa Coast Service). Built by Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne. Launched on 14 Oct. 1947. Completed in 1948. Purchased in Nov. 1964. Converted at Brest in 1965 and admitted to active service on 8 Mar. 1966 (left Brest the following day for the Pacific Nuclear Experimental Centre). Helicopter landing platform aft.



MAURIENNE

9 Mar. 1966, courtesy Admiral M. Adam

HENRI

POINCARE (ex-Maina Marasso) A 603
Displacement: 20,000 tons full load
Measurement: 12.885 tons gross
Dimensions: 565×74×31 feet

double reduction turbine. 1 shaft. Speed=15 kts. Machinery:

Boilers: 2 high pressure water tube

Built by Cantieri Riuniti de Adriatico, Monfalcone, Launched in Oct. 1960. Former Italian tanker. Purchased in Sep. 1964. Arrived in Brest dockyard on 1 Oct. 1964 to undergo conversion into a radar picket ship and guidance vessel the experimental guided missile station in the Landes (S.W. France). The conversion to base observation ship is scheduled to be completed for re-commissioning in July 1967. Named after the mathematician and scientist.

SHIPS (Annexes Hydrographiques) SURVEY

ASTROLABE A 780 (ex-P 681) BOUSSOLE A 781 (ex-P 680)

Displacement: 350 tons standard Dimensions: Guns:

137½×27×8½ feet 1—40 mm. AA. 2 M.G. 2 Baudouin DV.8 diesels. 1 shaft. Variable pitch. B.H.P. 800=13 kts. (max.) 4,000 miles 34 (3 officers, 31 men) Machinery:

Radius:

Complement: Construction

Authorised under the 1961 Programme. Specially designed for the Hydrographic Service for surveys in tropical waters. Built by Chantiers de la Seine Maritime, Le Trait. Laid down in 1962, launched on 27 May and 11 Apr. 1963, respectively, and commissioned in 1964.



ASTROLABE

1966, French Navy, Official

LA RECHERCHE (ex-Guyane) A 758 (ex-P 660)

780 tors standard, (1,047 tons full load) Displacement: 965 tons gross 203½ (pp.), 221½ (o.a.)×34½×13 feet 1 Werkspoor diesel, B.H.P.: 1,535=13 72 (5 officers and 67 men) Measurement: Dimensions: Machinery: Complement: 1,535=13.5 kts.

Construction

onstruction
Former passenger motor vessel built by Chantiers Zeigler at Dunl.irk. Launched on
7 Sep. 1951. Purchased in 1960 and converted by Cherbourg Dockyard into a sursying ship. Commissioned into the French Navy in Mar. 1961 and her name changed
om Guyane to La Recherche. To improve stability she was fitted with bulges. 17 Sep.



LA RECHERCHE

1964, French Navy, Official

L'ETOILE A 649

LA COQUILLE (ex-Atlantic Dolphin) A 678

349 tons 121½×26½ Displacement: Dimensions, Paxman diesel-electric. 1 shaft. Speed 12 kts. Machinery:

General

Former British trawler. Built by J.S. Doig, Grimsby, in 1963. Purchased in May 1965 and converted by Cherbourg Dockyard as a survey and scientific research ship for the Pacific Nuclear Experimental Centre.

There are two other large surveying vessels, Beautemps-Beaupré and La Pérouse, see under frigates on earlier page. Disposal

The old survey ship of the frigate type, Amiral Mouchez, F 752, was officially deleted from the list in 1965. deleted from the list in 1965.

ALIDADE (ex-Evelyne Marie) P 682

Displacement: 120 tons (approx.)
Dimensions: Length 78 feet
Machinery: 2 diesels. 1 shaft. Variable pitch. B.H.P.: 1,250=9 l.rts.

Machinery: 2 diesels, I shaft. Variable pitch. B.H.P.: 1,250=9 lbts. Complement: 11 men

Construction
Two small fishing trawlers purchased by the Navy and converted into surveying vessels of a new type by the Constructions Mécaniques de Normandie at Cherbourg to act as tenders to La Recherche (see above). Wooden hull and steel upperworks, Alidade was set afloat after conversion on 15 Nov. 1962 and Octant on 20 Dec. 1962. Commissioned in 1963.

AMMUNITION SHIP

I New Construction

ACHERON A 620

6.485 tons standard (10,250 tons full load)
482½×70½×21½ feet
2 SEMT-Pielstick diesels. 1 shaft. B.H.P.: 11,500=18 kts. Displacement: Dimensions:

Machinery:

Construction
Provided for under the 1961 Programme. Under construction at Brest Dockyard.
To be launched in 1968 and completed in 1969.

SHIPS (Voiliers-École) TRAINING

LA BELLE-POULE A 650 Displacement: Dimensions: Machinery: 227 tons 128 (o.o.)×233×113 feet Sulzer diesel. B.H.P.: 120=6 kts,

General

Auxiliary sail vessels. Built by Chantiers de Normandie (Fécamp) in 1932. Accommodation for 3 officers, 30 cadets, 5 petty officers, 12 men. Attached to Navy School. GRANDE HERMINE (ex-Menestral)

Ex-fishing boat, built in 1936. Purchased in 1963 in replacement for Dolphin (ex-Simone Marcelle) as the School of Manoeuvre Training Ship. MUTIN A 652

small coastal tender attached to l'École de pilotage (the School of Pilotage).

SEAWARD PATROL CRAFT

5 VC Type (Vedettes de Surveillance Côtière)

VC 1 P 751 VC 2 P 752

VC 3 P 753 VC 7 P 757

Displacement:
Dimensions:
Guns:
Machinery:

kts. 1,500 miles at 15 kts. 15 Radius: Complement:

General

Seaward defence motor launches of new type. All completed in 1958 and 1959. Built by the Construction Mécaniques de Normandie, Cherbourg (VC 3, 7, 10), and Lürrsens in Germany (VC 1 and 2).

Transfers VC 11 (P 761) was sold to Tunisla, being handed over to the Tunislan Navy on 22 Sep. 1959, VC 12 (P 762) was transferred to the Royal Moroccan Navy on 15 Nov. 1960 and renamed Es Sabiq. VC 4 (P 754) was transferred to the Republic of the Congo on 16 Nov. 1962. VC 5 (P 755) was transferred to the Senegal on 19 Jan. 1963. VC 9 (P 759) was transferred to the Republic of the Cote d'Ivoire (Ivory Coast) in 1963. VC 8 (P 758 was transferred to Madagascar in 1963 and renamed Mailaka. VC 6 (P 756) was transferred to the Cameronian Republic on 7 Mar. 1964.



VC II (P 761)

1959, Marius Bar

Disposals of HDML Type
Of the 32 former British harbour defence motor launches, several were sunk by the enemy in Indo-China. Others were scrapped. VP 764 was discarded in 1957.
VP 762 was loaned to the Royal Khmére Navy VP 748 was transferred to the Royal Khmére Navy in 1956, and VP 749 and VP 765 later. VP 747 (ex-HDML 1423) was transferred to the Cameronian Republic in 1961 and VP 775 (ex-VP 25, ex-HDML 1021) was transferred to the Gaboon in 1961. The last survivor, VP 768 (ex-VP 6, ex-HDML 1228) was transferred to the Cameronian Republic in June 1962.

Disposals of U.S. ML Type
Of the former motor launches of United States construction, VP 772 (ex-VP 51) was deleted from the list in 1964, and VP 773 (ex-VP 52) will be condemned. Fairmile ML Type
Oiseau des Isles, P 780, former Fairmile motor launch, was seized by the Customs authority and allocated to the Navy for training "fighting swimmers".

INSHORE MINESWEEPERS

(Dragueurs de Rade et d'Estuaire)

15 British Type. "Ham" Class

ARMOISE M 772 (ex-Wexham)
AUBEPINE M 781 (ex-Rendlesham)
CAPUCINE M 782 (ex-Petersham)
DAHLIA M 786 (ex-Whippingham)
GERANIUM M 784 (ex-Tibenham)
HIBISCUS M 785 (ex-Sparham)
HORTENSIA M 783 (ex-Mileham)

JASMIN M 766 (ex-Stedham)
JONQUILLE M 787 (ex-Sulham)
MYOSOTIS M 788 (ex-Riplingham)
OFILLET M 774 (ex-Isham)
PAQUERETITE M 775 (ex-Kingham)
PETUNIA M 789 (ex-Pineham)
TULIPE M 771 (ex-Frettenham)
VIOLETTE M 773 (ex-Mersham)

Displacement: Dimensions, Guns;

120 tons standard (140 tons full load) 100 (pp.), $106\frac{1}{2}$ (o.a.) \times 21 $\frac{1}{4}\times5\frac{1}{2}$ feet 1.—40 mm.Bofors AA. or 1.—20 mm. Oerlikon AA. forward

Machinery:

2 Paxman diesels, B.H.P.: 550=14 kts. (9 kts. when

Oil fuel:

Complement:

sweeping)
15 tons
12 (2 officers, 10 men)

General Former British inshore minesweepers of the "Ham" class transferred to France under the American "off-shore" procurement programme, First, M 771, was delivered in Dec. 1954. Last, M 789 was handled over at Hythe on 10 Nov. 1955.



VIOLETTE

1957, courtesy M. Henri Le Masson

The eight remaining converted inshore minesweepers of the former patrol (chasseur) type, M 690, M 691, M 695, M 696, M 711, M 713, M 714 and M 715 were declassed or condemned in 1959. M 697 was condemned in 1958.

Disposals of YMS Type Coastal Minesweepers

The seven remaining coastal minesweepers of the ex-U.S. YMS type, latterly rated as Batiments de Servitude (service vessels), Anémone, Asphodèle, Basilic, Clemotte, Genèt, Héliotrope and Perce-Neige, were all condemmed by 1965, except Asphodèle and Genét, it is officially stated. See full list of the transfers and disposals of this class in the 1962-63 edition.

PATROL BOATS (Ex-Flotilla du Rhin)

P 9783 P 9784 P 9785

P 9787

P 9788

Displacement: Dimensions:

45 tons $79\frac{1}{4}\times 4\frac{1}{4}\times 4\frac{1}{4} \text{ feet } \\ 8--0.5 \text{ M.G. (four twin mountings)} \\ 2 \text{ Daimler-Benz diesels. 2 shafts. B.H.P.: 1,000=18 kts.}$ Machinery:

VC 10 P 760

Construction
Built by Burmeister-Brême (P 9783, P 9784, P 9785) and Bodanwerft-Kressbronn.
Completed in 1954.

Disposals Disposals

The auxiliary patrol launch Rambervillers was deleted from the list in 1963. She was a war prize with the Ormont which was retired from service in Feb. 1958. The former Rhine Flotilla support ships Hoche, L 981, Kleber, L 982, and Marceau, L 980, were officially deleted from the list in 1965. The former Rhine Flotilla patrol boats P9781 and P 9782 (35 tons, duralumin hull), P 9796 (ex-41), P 9787 (ex-42) and P 9798 (ex-43), all 23 tons, P 9740, P 9741, P 9742 and P 9743 (12 tons, peralumin hull), P 9794 (10 tons, hydrofoil), and P 9790 and P 9791 (2 tons, peralumin hull), P 9794 (10 tons, hydrofoil), and P 9790 and P 9791 (2 tons, peralumin hull), P 9794 (10 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9790 and P 9791 (2 tons, hydrofoil), and P 9790 and P 9 P 9793 (6 tons, fixed foils) in 1966. Flotilla Notes

There are also seven police vedettes of 6.3 tons (Y 6670, Y 6671, Y 6672, Y 6677, Y 6678, Y 6679, and Y 6681); 2 control patrol launches of 10.2 tons (Y 6640, Y 6641); six river tugs; and 31 landing craft (LCM).

Transfers
Nine control patrol launches of 10.2 tons. Y 6642-Y 6650, one river tug, and 9 landing craft (LCM) were transferred to the Bundeswehr in 1957-58.

ENCLUME A 790

Displacement:

Dimensions:

350 tons $163\frac{1}{2}\times21\frac{1}{2}\times4\frac{7}{2}$ feet 3 MW.M motors, B.H.P.: 660=10 kts. Machinery:

An old German LCM salved in 1952 and refitted. Repair ship, Les Vosges (ex-Washington, ex-Brunehilde), was transferred to the Bundeswehr in Dec. 1957).

AMIRAL EXELMANS (ex-Germania) A 793

Displacement: Dimensions: Machinery:

220 tons $130^{2}\times21\times4^{1}_{2}~\text{feet} \\ 1~\text{MAN diesel.}~1~\text{shaft. B.H.P.:}~230=9.5~\text{kts.}$

General

Ex-river passenger boat built in 1927. Purchased in 1952. Used for the training of pilots. Penmant No. A 793.

TRANSPORTS

ANJOU (ex-Leoville)

BERRY (ex-M/S Médoc) A 644

Displacement:

Measurement: Dimensions: Machinery:

2,700 tons 1,203 tons gross, 1,552 tons deadweight 284 $\frac{1}{2}$ (o.a.) \times 38 \times 15 feet 2 MWM diesels coupled on one shaft. B.H.P.: 2,400=15 kts.

Built by Roland Werft, Bremen. Launched on 10 Sep. and 10 May 1958, respectively. Purchased in Jan. 1966 and Oct. 1964 from Cie Worms for the Pacific experimental station, renamed in 1966 and 1964 and refitted in 1966 and 1965. Classed as refrigerated transports. For CEP (Centre Experimental Pacific).

VERDON (ex-losta) A 634

Displacement: Measurement:

6.500 tons 3,100 tons gross, 4,275 tons deadweight 344\(\frac{3}{4}\times 40\(\frac{3}{2}\times 40\(\frac{3}\times 40\(\frac{3}\ti Dimensions:

General

General

enerus Former Norwegian motor ship. Built in 1952. Purchased in June 1964 by the rmy white and light products carrier service but mammed and commissioned by Army white and I the Navy for CEP.

TARN (ex-Organia, ex-Colomb Bechar, ex-Maria Laetitia) A 771

Displacement:

Measurement:

Dimensions:

2.660 tons
2.392 tons gross, 3,748 tons deadweight
330½×47½×19 feet
Reciprocating engine with exhaust turbine, I shaft.
S.H.P.: 1,900=12 kts. Machinery:

General
Built by Ateliers et Chantiers de Bretagne at Nantes. Launched on 23 June 1951,
Completed in 1952. Purchased in Apr. 1965 from Beringuier Ltd. Converted in
1965-66 into a general purpose cargo ship, ammunition carrier, transport and
store-ship and fitted out as a logistic support ship for the Pacific Center (bâtlment
magasin du CEP)

ARIEL Y 604

KORRIGAN Y 661 Displacement: Dimensions: Machinery: 225 tons full load 132½×24½×10¾ feet MGO diesels.. 2 shafts.B.H.P.: 1,640=16 kts.

SYLPHE Y 710
Displacement:

171 tons standard (189 tons full load)

Dimensions: Machinery:

126½×223×8¼ feet MGO diesel, 1 shaft. B.H.P.: 600=12 kts.

Small transports for personnel, built by Chantiers Franco-Belge in 1959-60 (Sylphe) and 1963-64 (Ariel and Korrigan).

FALLERON (ex-German Welle) A 614
Displacement: 150 tons (247 tons full load)
Machinery: Diesels. Speed: 7 kts.

General Herault was removed from the effective list in 1955. Alphée became a station ship in 1958. Ter (ex-German Heinrich) was condemned in 1964.

GAPEAU (ex-German B 284, ex-V 625, ex-Johan Schultz) A 616

Displacement: 300 tons

300 tons

Machinery: Deutz diesels. B.H.P.: 500=9 kts.

Photograph in 1957-58 and earlier editions. Cap Ferrat was stricken in 1960, and Moléne (ex-German B 262, ex-V 620, ex-Köln) in Aug. 1963.

TREBERON (ex-B 254) Y 712
Displacement: 120
Dimensions: 82>

Machinery:

120 tons 82×20×9 feet Diesel, B.H.P.: 120=8.5 kts.

General Former German danlayer used as small personnel transport for local service. Rated as Patrol Craft. Sister ship Rachgoun was scrapped in 1957.

LANDING SHIPS

BDC (Rated as Batiments de Debarquement de Chars)

ARGENS (BDC 2)

BIDASSOA (BDC 5) BLAYET (BDC 3)

DIVES (BDC 4)
TRIEUX (BDC 1)

Displacement:

1,400 tons standard, 1,765 tons normal (4,000 tons

Dimensions:

Guns:

1,400 tons standard, 1,765 tons normal (4,000 tons full load)
328 (oa,)×50×14 feet
2—40 mm. AA., 2—40 mm. AA. (Bidassoa, Blavet, Dives 1—4·7 inch mortar, 3—40 mm. AA.
5EMT-Pielstick diesels, 2 shafts. B.H.P.: 2,000=11 kts.
18.500 miles at 10 kts.
85 (6 officers and 79 men), Plus 170 troops (normal)

Machinery: Radius:

Complement: Built by Chantiers Seine Maritime (Bidassoa, Dives) and Chantiers de Bretagne, Nantes (others). Launched on 7 Apr. 1959, 30 Dec. 1960, 15 Jan. 1960, 29 June 1960 and 6 Dec. 1958, respectively All commissioned in 1960-61. Can carry: 4 LCVP's, 1,800 tons of freight, 335 (up to 870 if required) troops (329 in bunks,



TRIEUX

552 in hammocks).

1960, French Navy, Official

CHELIFF (ex-U.S. LST 874)

ODET (ex-U.S. LST 815)

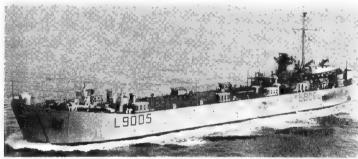
Displacement: Dimensions: Machinery:

1,625 tons standard (4,030 tons full load) 316 (w.l.), 328 (o.a.) \times 50 \times 14 (max.) feet G.M. diesels. 2 shafts. B.H.P.: 1,700=11 kts.

General nerdi Former U.S. tank landing ships, converted and used as transports. Scheduled to withdrawn from active service in 1961, but restored to the Navy List in 1963. Disposals

Disposals

Adour (ex-LST 860), seriously damaged, was raised to become an accommodation ship (removed to France), but was scheduled to be scrapped in 1958. Vire was scrapped in 1957, Golo (ex-LST 973) was discarded in 1960. Orne (ex-LST 508) and Rance (ex-LST 223) were condemned in Mar. 1961, and Lalta (ex-LST 117) was withdrawn in Jan. 1962 and used as a port depot ship.



ODET

Added 1966

LANDING CRAFT

6 + I EDIC (Engins de Debarquement Infanterie Chars)

EDIC 1 (7 Jan. 1958) EDIC 2 (21 Feb. 1958)

EDIC 3 (17 Apr. 1958) EDIC 4 (24 July 1958)

EDIC 5 (11 Apr. 1958) EDIC 6 (11 Oct. 1958)

FDIC 7

292 tons standard (642 tons full load)

Displacement: Dimensions: Guns: Machinery: Complement:

292 tons standard (642 tons run 1000; $193\frac{1}{2}\times39\frac{1}{4}\times4\frac{1}{2}$ feet 2—20 mm. AA.
MGO diesels. 2 shafts, B.H.P.: 1,000=8 kts, 16 (1 officer, and 15 men)

EDIC 1 to 4 were built by C. N. Franco Belge. EDIC 5 and 6 by Toulon Dock-yard. Launch dates above. All completed in 1958-59. Pennant Nos. L9091 to L 9096. A seventh EDIC was ordered from C.N. Franco Belges for delivery in Jan. 1967.



EDIC 6

1959, Marius Bar

4 EDA (Engins de Debarquement Ateliers)

Same hull and engine characteristics as the EDIC type, but equipped as repair ships. Built in 1964 and 1965. No names allocated. ISSOLE

Displacement: Dimensions:

Machinery:

600 tons full load $160\frac{1}{4}\times23\times7\frac{1}{4}$ feet 2 diesels. B.H.P.: 1,000=12 kts.

Built at Toulon in 1957-58. Coaster with bow doors and ramp. Pennant No. L 9097. A photograph of Issole appears in the 1964-65 and 1965-66 editions.

LCT 9062

LCT 9098

Former British tank landing craft (LCT 3s). LCT 9098 (ex-1274) was purchased in 1963, and is now fitted as a workshop.

BOOM DEFENCE VESSELS

5 "Off-shore" U.S. AN Type

FOURMI (ex-AN 97) GRILLON (ex-AN 95) CIGALE (ex-AN 98) CRIQUET (ex-AN 96)

SCARABÉE (ex-AN 94)

Displacement: Dimensions: Guns: Machinery:

560 tons standard (770 tons full load)
149½×33½×10½ feet
1—40 mm. Bofors, 4—20 mm. AA.
2, 4-stroke diesels, electric drive, B.H.P.: 1,600=12 kts.

General General
U.S. AN type "Off-shore" orders, Sister ship G 6 was allocated to Spain, Criquet
was launched on 3 June 1954, Ciggle on 23 Sep. 1954, Fourmi on 6 July 1954,
Grillon on 18 Feb, 1954 and Scarabée on 21 Nov. 1953, Rated as Garbarres
(Mouilleur de Filets), A photograph of Criquet appears in the 1957-58 to 1964-65



CIGALE

1965, courtesy Admiral M. Adam

4 Ex-U.S. AN Type Netlayers

ARAIGNEE (ex-Hackberry, ex-Maple) LOCUSTE (ex-Locust)

SCORPION (ex-Yew)
TARENTULE (ex-Pepperwood, ex-Wainut)

Displacement: Dimensions: Guns: Machinery: Complement:

TARENTULE (ex-repperwo 560 tons standard (850 tons full load) 146 (w.l.), 163 (o.a.)×30½×11½ feet 1—3 inch AA., some M.G. Diesel-electric. H.P.: 800=12 kts.

General

eneral

Launched on 6 Mar. 1941, 1 Feb. 1941, 25 Sep. 1941 and 25 Aug. 1941, reectively. Locuste was purchased in 1966. The three others were transferred in



ARAIGNEE

1960, Giorgio Arra

2 Former Aircraft Tender Type

COMMANDANT ROBERT GIRAUD (ex-German Immelmann) A 755

Displacement Dimensions: Machinery:

Radius: Complement: 1,000 tons standard (1,380 tons submerged) $256\times36\times12$ feet 4 MAN diesels. 2 shafts. B.H.P.: 8,800=20.5 kts. 4,000 miles at 12 kts. 77 (6 officers and 71 men)

General

Former German aircraft tender. Built by Norderwerft, Hamburg. Launched in 1941. Completed in Dec. 1941. Transferred by Great Britain in 1946. Re-rated as Escorteur de deuxième Classe in 1953. Aviso Escorteur 1953, Aviso 1955, and Gabarre 1963. Armament removed. A photograph appears in the 1964-65 edition.

MARCEL LE BIHAN (ex-German Greif) A 759

Displacement: Dimensions:

800 tons standard (1,000 tons full load)
236½×34½×10½ feet (max.)
4—20 mm. AA.
2 MAN diesels. 2 shafts, B.H.P.: 4,400=16 kts,
2,000 miles at 13 kts,
61 (5 officers and 56 men)

Guns: Radius: Machinery:

Complement:

Former German aircraft tender, Built by Lubecker Fleudewerle. Launched in 1936. Completed in 1937. Transferred by U.S.A. in Feb. 1948. Re-rated Escorteur de Deuxième Classe early 1953, Aviso Escorteur 11 Aug. 1953, Aviso 1955 and Gabarre 1 Nov. 1959, 4·1 inch gun and 2—40 mm. removed. Tender for bathysphere Archimede.



MARCEL LE BIHAN

1965, French Navy, Official

PATIENTE

PERSISTANTE

Patiente 450 tons. Persistante 350 tons. Girafe and Persévérante were scrapped in 1957, Fidéle in 1958, Puissante in 1960, Agissante in 1961, Victorieuse in 1964.

OILERS (Transports Petroliers)

LA CHARENTE (ex-Beaufort) A 626

7,084 tons light (26,000 tons full load) 12,373 tons gross, 18,800 tons deadweight $587\frac{1}{2}\times72\times30\frac{1}{2}$ feet Displacement: Measurement:

Dimensions: Machinery:

General Electric geared turbine Boilers:

General

Former Norwegiam tanker built by Kaldnes mek. Verksted Tönsberg, in 1957. Purchased by the French Navy in May 1965 and adapted for the Pacific Experimental

ISERE (ex-La Mayenne ex-Caltex-Strasbourg)

10,172 tons light 18,000 tons deadweight Displacement: Measurement: 559×711×30+ feet Dimensions:

Machinery: Boilers: single geared Parsons turbine. S.H.P.: 8,260=16 kts.

General

Built by Seine Maritime, Launched on 22 June 1959. Former French tanker, Purchased late in 1964 for the Pacific Nuclear Experimental Centre.

LAC CHAMBON (ex-Anticline) A 629 LAC TONLE-SAP (ex-Pumper) A 631 LAC TCHAD (ex-Syncline) A 630

800 tons light (2,670 tons full load)
235 × 37 × 15} feet
3—20 mm. AA.
2 Fairbanks-Morse diesels. B.H.P.: 1,150=11 kts.
37 Displacement:
Dimensions:
Guns:
Machinery:
Radius:
Complement:

Ex-American fuel oil barges. Acquired in Dec. 1944 and Mar. 1945. Lac NoIr was scrapped in 1951, Lac Pavin in 1953.



LAC TONLE SAP

1965, French Navy, Official

LA SAÖNE A 628

LA SEINE A 627

7,350 tons light (23,800 tons full load) Displacement:

Measurement:

16,870 tons deadweight $525\times72\frac{1}{2}\times33$ feet Parsons geared turbines. 2 shafts. S.H.P.: 15,800= Machinery:

17 kts. Boilers: Penhoët Complement: 200

General

General Ordered as fleet tankers. After the war completed as merchant tankers. Returned to French Navy from charter company Sep. 1953. La Seine was fitted as a fleet replenishment ship in 1961, La Saöne in 1962. Now rated as Petroliers Rivatailleurs d'Escadre. They carry 11,500 tons of food, and have 75,000 1. tanks of wine. Photograph of La Saöne in 1959-60 to 1961-62 editions.



LA SEINE

1962, French Navy, Official

ABER-WRAC'H (ex-CA 1) A 619

1,380 tons standard (3,400 tons full load)
262\frac{1}{2} (pp.), 284 (o.a.)\times 40\times 15\frac{3}{4} feet
1-40 mm. AA.
1 diesel. Variable pitch propeller. B.H.P.: 2,000=12 kts.
5,000 miles at 12 kts.
51 (2 officers and 49 men) Displacement: Dimensions:

Guns:

Machinery: Radius

Complement:

Authorised in 1956. Built at Cherbourg. Ordered in 1959. Laid down in 1961. The after part with engine room was launched on 24 Apr. 1963. The fore part was built on the vacated slip, launched and welded to the after part. Complete hull floated up on 21 Nov. 1963. Commissioned in 1964. Pennant No. A 619. Disposals

Of the three petroliers ravitalliers d'escadre of "La Baise" class, La Charente was scrapped in 1960, La Mayenne in 1961, and La Baise was deleted from the list in 1966.

SAINTONGE (ex-Santa Maria) A 733

294 tons gross, 500 tons deadweight 177×28×10½ feet 1 diesel. 1 shaft. B.H.P.: 520=9 kts. Measurement: Dimensions:

Machinery:

Built by Chantlers Duchesme et Bossière, Le Havre for a Norwegian owner under the name of Sven Germa. Launched on 12 July 1956. Purchased in Apr. 1965 from the firm of H. Beal & Co., Fort de France for the Pacific Nuclear Experimental

GUYENNE (ex-Douce France, ex-Sunfarer) A 735

375 tons light (800 tons full load)
300 tons gross, 580 tons deadweight
177×27½×11 feet
1 diesel. 1 shaft. B.H.P.: 580=10.5 kts. Displacement: Measurement: Dimensions:

Built in 1954-55 by D.W. Kremer und Sohn, Elmshorn. Purchased in May 1965 om Cie Marseille Fret for the Pacific Experimental Station facilities.

WATER CARRIERS

HANAP (ex-Stjordels Fjord) : 450 tons light (1,369 tons full load) 184 × 28½ × 13} feet Sulzer diesels. B.H.P.: 1.000=11·5 kts. GIBOULÉE

Displacement: Dimensions:

Machinery:

General

Rated as regional supply ships, Crew 27. Arrosolr was renamed Llamone in 1954. Photograph of Liamone in 1957-58 edition. Nos. A 741, A 740, A 750. in Mar. SAHEL

RUMMEL Displacement: 630 tons light (1.450 tons full load)

650 tons deadweight 176½×29½×14½ feet 2—20 mm. AA. 2 diesels. B.H.P.: 700=12 kts. Measurement: Dimensions:

Guns: Machinery:

General Sahel was completed in Aug. 1951, Rummel in 1952 by Chantiers Naval de Caen. Nos. A 635 and A 638. Photograph of Sahel in 1957-58 and earlier editions.

Displacement:

Displacement: Guns: Machinery:

335 tons standard (683 tons full load) $164\frac{1}{2} \times 27 \times 9$ feet 2—20 mm. AA. Triple expansion. 1 shaft. I.H.P.: 800=10 kts.

Built by A. C. Bretagne. No. A 751. Sister Torrent was scrapped in 1964.

BRUINE CATARACTE DELUGE FORMENE ONDEE FONTAINE BENZENE MIRAGE

Small water carriers (Benzene and Formene are fuel barges) of various displacements (Cataracte 330 tons), Cascade, Durance and Fralche were scrapped in 1957, Aube in 1958, Ardèche in 1960, Casamance and Zöghouan in 1963, Alguade in 1964.

FLEET TUGS

HERCULE ACTIF TRAVAILLEUR VALEUREUX LUTTEUR COURAGEUX LABORIEUX ROBUSTE

Displacement:
Dimensions:
Machinery:
Radius:
Complement: 230 tons 92×26×13 feet 1 MGO diesel. B.H.P.: 1,050=11 kts. 2,400 nautical miles

2,400 15

Construction

Courageux, Hercule, Robuste and Valeureux were completed in 1960 and the other four in 1962-63 at Le Havre, F. Ch. de la Mediterranee for service at Cherbourg (Lutteur), Toulon (Actif and Travailleur) and Brest (Laborieux). HIPPOPOTAME (ex-Utrecht)
Measurement: 524 tons gross
Diesel-electric, S.H.P.: 2,600

Former Netherlands high sea tug. Built in 1943. Purchased by the French Navy in Jan. 1964 to be used at the Experimental Base in the Pacific. Admitted to active service on 5 Mar. 1964.

BELIER **PACHYDERME**

Displacement: 900 tons standard (1,185 and 1,115 tons full load,

respectively)
1.H.P.: 2,000=12 kts.
180 tons
3,000 miles Machinery: Oil fuel: Radius:

Photographs

A photograph of Pachyderme appears in the 1957-58 edition.

BUFFLE

Displacement:
Dimensions:
Machinery:
Complement:
Construction
Launched on 4 May 1939. 900 tons standard (1,180 tons full load) $167\frac{1}{2} \times 33 \times 10$ feet 2 sets triple expansion. I.H.P.: 2,000=12 kts. 32

UTILE

Displacement: Dimensions: Machinery: 500 to 682 tons (full load) $114\frac{1}{2} \times 27\frac{1}{2} \times 10$ feet Triple expansion. I.H.P.: 1,000=10 to 11 kts. General

Both laid down in 1937-38. Archarne by Brest, Utile by F. & C. de la Gironde, Bordeaux, Actif, Applique and Capét were scrapped in 1957-58. Contentin was withdrawn from service in 1960. Champion was condemned in 1961, Obstiné in 1965. Enténté and Tetu in 1966.

INFATIGABLE (ex-Polangen)

) 540 tons 1.H.P.: 1,200=11 kts. Displacement: Machinery:-IMPLACABLE (ex-Fohn II)

Displacement: Machinery;

620 tons
1.H.P.: 1,600=11 kts.

Disposals

Introltable (ex-Nordergrunde) was condemned in Mar. 1961, and Mammouth in July 1963. Imbattable (ex-Nesserland) was officially deleted in 1965.

850 tons (1,180 tons full load) 1.H.P.: 1,800-12 kts.

ELEPHANT (ex-Bar)
Displacement:
Machinery:
Disposal

The tug Samson (ex-German Suder Hever) was officially condemned Mar. 1961.

RHINOCÉROS

Displacement: 700 tons

Machinery: Diesels. B.H.P.: 1.850=12 kts.

Photographs
A photograph of Rhinocéros appears in the 1953-54 to 1957-58 editions. Another tug of this type was purchased in 1964, it is officially stated.

MALABAR (ex-YTB 458, ex-Evea)

Displacement: 300 tons Machinery:

Diesel. B.H.P.: 1.020=14 kts. General

Transferred from the U.S. Navy in 1944. Sister Coolle was deleted in 1965.

TENACE (ex-ATA 226)

 Displacement: Machinery: 400 tons Diesels, B.H.P.: 1,200-10 kts.

Disposals

Locmine was condemned in 1964, and Efficace was officially deleted from the list in 1966.

Harbour Tugs

Naciour lags Acajou, Balsa, Bouleau, Charme, Chene, Cormier, Equeurdreville, Frene, Hetre, Hevea, Latanier, Meleze. Merisier, Okoule, Olivier, Peuplier, Pin, Piatane, Hevea, Latanier, Saule, Sycomore.

GERMANY

Bundesmarine Administration

Chief of Naval Staff, Federal German Navy: Vice-Admiral Karl Adolf Zenker

Commander-in-Chief of the Fleet: Vice-Admiral Heinrich Gerlach

Naval Attaché in London: Captain G. Kray Naval Attaché in Washington: Captain Helmuth Schmoeckel

Future Naval Programme

Strength to be increased from 235 ships and 31,000 personnel in 1964 to 280 ships and 43,000 personnel by 1970.

New construction guided missile ships planned include:

8 destroyers of about 4,000 tons, 10 so called "corvettes" of about 2,000 tons.

10 fast patrol boats of about 250 tons with a surface-to-surface launching system.

Personnel

1961: 23,100 (2,100 officers, 21,000 men) 1962: 29,000 (2,636 officers, 26,364 men) 1963: 30,000 (2,800 officers, 27,200 men) 1964: 31,000 (3,000 officers, 28,000 men) 1965: 33,000 (3,000 officers, 30,000 men) 1966: 36,300 (3,200 officers, 33,100 men)

Mercantile Marine

Lloyd's Register of Shipping: 2,525 vessels of 5,279,493 tons gross

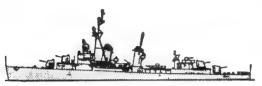
Scale: 150 feet=1 inch



DEUTSCHLAND



HAMBURG Class



FLETCHER Class



SCHEER



GNEISENAU



KÖLN Class



SCHARNHORST



LAHN, LECH

SUBMARINES

6 New Construction Hunter-Killer Type

U 25 U 29 U 26 U 27 U 28

Displacement: Tubes: Machinery; Complement:

U 6

1,000 tons
For homing torpedoes
Diesels. Electric motors

General

Construction of six oceangoing hunter-killer U-boats displacing up to 1,000 tons was authorised on 9 Oct, 1963 for delivery from German shipyards by 1967.

12+12 Coastal Type

U 15 U 16 U 13 U 17 U 18 ew Construction
U 13-24 are reported to be of similar design to
4-9.

U 7 U 8 U 9 U 10 (30 May 1963) (11 Oct. 1963)

U 30

U 1 (21 Oct. 1961) U 2 (25 Jan. 1962) U 3 (7 May 1962) U 4 (22 Aug. 1962) U 5 (22 Nov. 1962) U 6 (22 Apr. 1963)

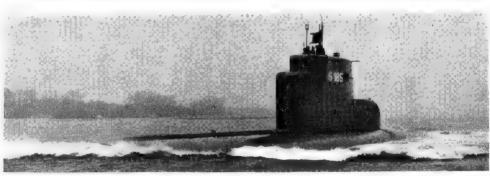
Displacement: Displacement Dimensions: Tubes: Machinery:

450 tons 144 $\frac{1}{5}$ (o.a.)×15 $\frac{1}{5}$ feet 8 (bow) 2 diesels. B.H.P.; 1,200=11 kts.

surface 2 electric motors. H.P.: 1,700 =17 kts. submerged 21 officers and ratings

Complement:

General General
All built by Howaldtswerke, Kiel in floating docks,
Launch dates above. "Teardrop" hull. Fitted with
schnorkel. First submarines designed and built by
Germany since the end of the Second World War.
U 3, lent to Norway on 10 July 1962 and temporarily named Kobben (\$ 310), was returned in 1964.



1966, Official

Design Improvement
U 4-12 were built to a heavier and improved design,
U 1-3 modified accordingly. U 1 was completely reconstructed from late 1963 to 4 Mar. 1965. U 9-12
have hulls of different steel alloys of non-magnetic
propensity. (See original appearance in the 1962-63
and 1963-64 editions). U 4-8 are sheathed with zinc.

Experimental Midget Type
The planned third unit of the midget type did not materialize. Hans Techel was launched on 15 Mar, 1965 (trials Oct. 1965) and Friedrich Schüren on 10 Nov. 1965. Built by Atlas Werke, Bremen. Displacement: 100 tons surface, 150 tons submerged, Dimensions: 72×11 feet. Machinery: Diesels and electric motors, 350 h.p.=13 kts, surface and submerged. 2 torpedo tubes. Crew 6.

I Converted Type XXI

WILHELM BAUER (ex-U 2540) Pennant No. Y 880

Displacement:

Dimensions: Tubes: Machinery:

1,620 tons surface (1,820 tons submerged)
252\frac{2}{3}\times 21\frac{2}{3}\times 20\frac{1}{3}\text{ feet}
4-21 inch (bow)
2 diesels. B.H.P.: 1,200. Diesel 2 desers. B.H.P.: 1,200. Dieser electric drive.
2 electric motors. H.P.: 5,000=17.5 kts.

General General
German Second World War Type XXI. Launched in
1944 by Blohm and Voss. Hamburg. Sunk on 3 May
1945. Raised in 1957. Rebuilt in 1958-59 at Howaldtswerke, Kiel, for commissioning on 1 Sep. 1960. Used



WILHELM BAUER

1966, Stefan Terzibaschitsch

for experimental purposes on electronic equipment machinery and outfit in the Erpobungsstelle für Marine-

waffen (Experimental Station for Naval Weapons), Conning tower has been modified

HAI (ex-UW 20, ex-U 2365) NATO Pennant No.; \$ 170 HECHT (ex-UW 21, ex-U 2367) NATO Pennant No.: \$ 171

Submarines - contd.

2 Type XXIII

Displacement:

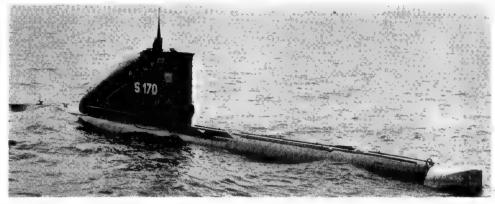
Dimensions: Tubes: Machinery:

180 tons standard, 232 tons surface (256 tons submerged)
118×10×12 feet
2—21 inch (bow)
1 MWM diesel. I shaft. B.H.P.:
580=9.7 kts. surface
1 Electric motor, H.P.: 600=
12.5 kts. submerged
1 Electric motor.
H.P.: 35=2 kts. submerged
18 tons

Oil fuel: Radius: Complement:

tons 1,350 miles at 9 kts.

Complement: 16
General
German war type XXIII. Built in 1945 at Deutsche
Werft, Hamburg. Raised in the Western Baltic in 1956,
rebuilt at Howaldtswerke, Kiel in 1957. Used for ASW
training and submarine crew training. Hal (Shark) was
commissioned on 15 Aug. 1957, Hecht (Pike) was commissioned on 1 Oct. 1957. Both in service in 1958. A
photograph of Hecht appears in the 1963-64 to 196566 editions.



1966. Official

Combleted

1960 12 Oct. 1964

14 Aug. 1962 6 July 1965 26 Mar. 1960 23 Mar. 1964 4 May 1963 1966

HAI

Reconstruction
On 19 Oct. 1962 both boats commenced their third

reconstruction, being lengthened by about 2 m. They recommissioned on 1 Aug., 1963.

3 + 5 New Construction Guided Missile Armed Type "Charles F. Adams" Class

Displacement:

4,000 tons normal 4,500 tons

Dimensions:

full load)
431 (w.l.), 440 (o.a.)×47×15
(mean), 20 (max.) feet

DESTROYERS

Guided weapons: "Tartar" surface-to-air missile launcher

2—5 inch, 54 cal. d.p. single Guns:

2—5 inch, 54 cal. d.p. single mount, rapid fire ASROC rocket launcher, 2 triple torpedo launchers, 1 D.C.T. Provision for helicopter Geared steam turbines. 2 shafts, S.H.P.: 70,000=35 kts. A/S weapons: Aircraft:

Machinery: Boilers:

Pennant No.

350 Complement:

General

Bullders

H. C. Stulcken Sohn, Hamburg H. C. Stulcken Sohn, Hamburg H. C. Stulcken Sohn, Hamburg H. C. Stulcken Sohn, Hamburg

General
In 1964 it was decided that three guided missile armed destroyers of the "Charles F. Adams" class will be built in United States shipyards and another five in West German shipyards.
In 1965 the contract for the construction of the first three guided missile armed destroyers, assigned the United States Navy numbers DDG 28, DDG 29 and DDG 30, was awarded to the Bath Iron Works Corporation, Bath, Maine. They are expected to be delivered in 1968-69. Cost \$43,754,000.

Laid down Launched

4 "Hamburg" Class

Displacement:

3,340 tons standard (4,330 tons

Dimensions:

3,340 tons standard (4,330 tons full load)
439§×44×14¼ feet
4—3·9 inch, dp. (100 mm.); 8
—40 mm. AA. (4 twin)
5—21 inch (3 bow, 2 stern), and 2 for ASW torpedoes
2 Bofors four-barrelled depth charge mortars (rocket launchers)
Geared steam turbines. 2 shafts
S.H.P.: 68,000=35 kts.
288 Tubes: A/S weapons:

Machinery:

Complement: 288 General

BAYERN HAMBURG HESSEN

Name

SCHELSWIG-HOLSTEIN

Are named after countries of the German Federal Re-public Completion was retarded in order that recent technical developments could be incorporated in the design. Bayern and Hessen are slightly different from

D 183 D 181 D 184

D

1959

Hamburg and Schelswig-Holstein.
Photographs
Photographs of Hamburg appear in the 1963-64 to

20 Aug.

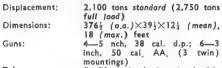
1965-66 editions.



BAYERN

1966, Official

Z 1 (ex-U.S.S. Anthony, DD 515) Z 2 (ex-U.S.S. Ringgold, DD 500) Z 3 (ex-U.S.S. Wadsworth, DD 516) Z 4 (ex-U.S.S. Claxton, DD 571) Z 5 (ex-U.S.S. Dyson, DD 572) Z 6 (ex-U.S.S. Charles Ausburn, DD 570)	Pennant No. D 170 D 171 D 172 D 178 D 179 D 180	Builders Bath Iron Works Corporation, Maine Federal S.B. & D.D. Co., Port Newark Bath Iron Works Corporation, Maine Consolidated Steel Corporation, Orange Consolidated Steel Corporation, Orange Consolidated Steel Corporation, Orange	Laid down 17 Aug. 1942 25 June 1942 18 Aug. 1942 25 June 1941 25 June 1941 14 May 1941	Launched 20 Dec. 1942 11 Nov. 1942 10 Jan. 1943 1 Apr. 1942 15 Apr. 1942 16 Mar. 1942	Completed 26 Feb. 1943 24 Dec. 1942 16 Mar. 1943 8 Dec. 1942 30 Dec. 1942 24 Nov. 1942	German commissioned 17 jan. 1958 14 july 1959 6 Oct. 1959 15 Dec. 1959 23 Feb. 1960 12 Apr. 1960
6 Ex-U.S. "Fletcher" Clas	s		N			74,3154



Guns:

inch, 50 cal. AA, (3 twin) mountings)
5-21 inch (quintuple bank).
Z1, Z2, Z3, Z4, and Z5 have
2 ASW tubes each. No tubes in Z6. Tubes:

in Z6.

2 hedgehogs, I depth charge rack

2 sets G.E. geared turbines.

2 shafts. S.H.P.: 60,000=30

to 35 kts. A/S weapons: Machinery:

to 33 kts. 4: Babcock & Wilcox 650 tons 6,000 miles at 15 kts. 280 Boilers: Oil fuel: Radius: Complement:

Former American "Fletcher" class destroyers. On loan



ZERSTÖRER 5

from the United States for five years. Anthony, now Z 1 (NATO Pennant No. D 170) arrived at Bremer-

1963, courtesy Godfrey H. Walker, Esq.

haven on 14 Apr. 1958, Ringgold was transferred by the U.S.A. at Charleston, S.C., on 14 July 1959.

2,100 tons standard (2,550 tons

6 "Koln" Class

	Pennant No.	Builders	Launched	Completed	
AUGSBURG	F 222	H.C. Stülcken Sohn, Hamburg	15 Aug. 1959	7 Apr. 1962	
DRAUNSCHWEIG	F 225	H.C. Stülcken Sohn, Hamburg	3 Feb. 1962	16 June 1964	
EMDEN	F 221	H.C. Stülcken Sohn, Hamburg	21 Mar. 1959	24 Oct. 1961	
KARLSRUHE	F 223	H.C. Stülcken Sohn, Hamburg	24 Oct. 1959	15 Dec. 1962	
KÖLN	F 220	H.C. Stülcken Sohn, Hamburg	6 Dec. 1958	15 Apr. 1961	
LUBECK	F 224	H.C. Stülcken Sohn, Hamburg	23 July 1960	6 July 1963	



EMDEN

KÖLN

1966, Bundesmarine, Official



General
A new type of fast anti-submarine frigates or escort destroyers, All built by H. C. Stülcken Sohn, Hamburg. Ordered in Mar. 1957. All ships of this class are named after towns of West Germany. Classed as Geleitboote.

Displacement:

Dimensions:

A/S weapons: Machinery-

Complement:

Tubes:

Engineering
Each of the two shafts is driven by two diesels coupled and geared to one BBC gas turbine. Variable pitch propellers.

Photographs
A photograph of Augsburg appears in the 1965-66 edition.



1962. Bundesmarine, Official

FRIGATES (ex-Escort Destroyers)

FAST FRIGATES

Pennant No. BROMMY (ex-H.M.S. Eggesford)
RAULE (ex-H.M.S. Albrighton) F 218 F 217

2 British "Hunt" Class, Type III

Displacement: 1,087 tons standard (1,620 tons full load)

full load)
264½ (pp.), 280 (o.a.)×31½×
14 (max.) feet
1—40 mm. AA.
2 ASW torpedo launchers. 2
four-barrelled depth charge mor-Dimensions:

Guns: A/S weapons:

tars

Machinery:

tars
Parsons geared turbines. 2 shafts.
S.H.P.: 19,000=25.5 kts.
2 Admiralty three-drum type
345 tons
3,600 miles at 14 kts.
80 (170 max.) Boilers:

Oil fuel: Radius:

Complement:

General

Former British frigates (ex-escort destroyers) of the "Albrighton" class ("Hunt" class, Type III). Reconstructed in 1958-59 and transferred from Great Britain to the Bundesmarine, commissioning on 14 May 1959. Rated as training ships for the submarine weapons school. Both modified in 1961. Brommy was annually

Builders J. Samuel White & Co. Ltd., Cowes John Brown & Co. Ltd. Clydebank

Laid down 23 June 1941 30 Dec. 1940

Launched 12 Sep. 1942 11 Oct. 1941

Completed 21 Jan. 1943 22 Feb. 1942



refitted by Palmers Hebburn works of Vickers-Arm-strongs in 1962, 1963, and 1964, Raule was modified by Howaldtswerke, Hamburg, 1962-64, Brommy will become an experimental ship for the Bundesamt für

1963, Bundesmarine, Official

Wehrtechnik und Beschaffung.

Photographs
A photograph of Brommy appears in the 1962-63 edition.

I British "Hunt" Class, Type II

1,050 tons standard (1,160 tons full load)
264½ (pp.), 280 (o.a.)×31½×
14 (max.) feet
1—3.9 inch AA.; 4—40 mm. Displacement: Dimensions:

Guns:

1—3.9 inch AA.; 4—40 mm. AA.
AA.
Parsons geared turbines. 2 shafts.
S.H.P.: 19,000=25 kts.
2 Admiralty three-drum type
345 tons
3,600 miles at 14 l.ts.
82 (7 officers, 75 ratings) 130 max. Machinery:

Boilers:

Oil fuel:

Radius: Complement:

General

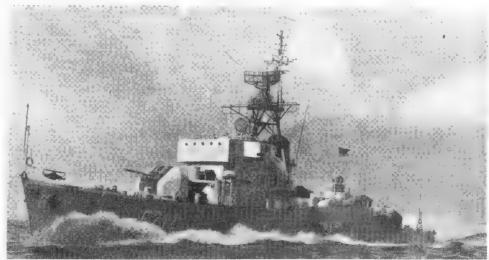
General
Former British frigate (ex-escort destroyer) of the
"Blankney" class ("Hunt" class, Type 11). Purchased
in Nov. 1957. Officially taken over after refit in Great
Britain, at Langton Branch Dock, Harland & Wolff
Ltd., Liverpool, 2 Oct. 1958. Commissioned and renamed at Bremerhaven on 18 Oct. 1958. Fitted with
stabilised, radar and cowl funnel, Employed as a training ship by the Gunnery School. Modified in 1961.
Anti-submarine weapons removed. Underwent further
reconstruction by Howaldtswerke, Hamburg, in 196264.



Builders Yarrow & Co. Ltd., Scotstoun, Glasgow, Laid down 19 Aug. 1940

Launched 15 Jan. 1942

Completed 7 May 1942



GNEISENAU

1965, Stefan Terzibaschitsch

FRIGATES (ex-Sloops)

SCHARNHORST (ex-H.M.S. Mermald)

SCHEER (ex-H.M.S. Hart)

Pennant No.: F 213

Builders:

Laid down: 8 Sep. 1942

Launched: 11 Nov. 1943

Completed: 12 May 1944

F 216

Wm. Denny & Bros Ltd., Dumbarton Alex Stephen & Sons Ltd., Govan, Glasgow

27 Mar. 1942

7 July 1943

12 Dec. 1943

2 Ex-British "Black Swan" Class

Displacement: Dimensions:

1,490 tons standard (1,975 tons

1.490 tons standard (1.975 tons full load)
300×38½×11 (max.) feet
Scharnhorst: 2--3.9 inch AA., 4
-40 mm. AA.
Scheer: 4--40 mm. AA.
1 D.C.T.: 1 D.C. rack; 40 D.C.
20 (Scharnhorst)

A/S weapons: Mines: Machinery:

S.H.P.: 4,300=18 kts.
Admiralty three-drum type 370 tons

Boilers: Oil fuel: Radius: Complement:

370 tons 4,500 miles at 12 kts. 76 (7 officers, 69 ratings) 190 max. Scharnhorst 125

General

Former British frigates (ex-sloops) of the Modified "Black Swan" class.

Transfer

Scheer was handed over at Palmers, Jarrow, on 27 April 1959, and Scharnhorst was handed over at Vickers-Armstrongs, Tyne on 5 May 1959.

Training
Scharnhost is employed for gunnery training and Scheer for radar training.

Conversion

Conversion
Scharnhorst was converted by Stülcken Sohn, Hamburg, from June 1961 to July 1962, with French type 100 mm. guns (her former armament was 6—4 inch AA., 2—40 mm. AA.) Scheer was converted by Seebeck from Sep. 1961 to Nov. 1962 into a radar picket training ship,

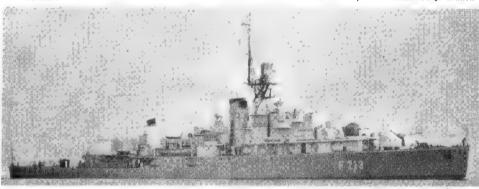
Disposals

Of this class Graf Spee (ex-H.M.S. Flamingo), F 215, and Hipper (ex-H.M.S. Actaeon), F 214, were officially stricken from the active list on 31 July 1964. They will be reconstructed as Air/Sea Rescue Ships (Flugsicherheitsschiffe).



SCHEER

1964, courtesy Mr. Michael D. I. Lennon



SCHARNHORST

1964, Stefan Terzibaschitsch

13 "Rhein" Class

DONAU 69 ELBE 61 ISAR 64

LAHN 55 MOSEL 67 SAAR 65 LECH 56 NECKAR 66 WERRA 68 MAIN 63 RHEIN 58 WESER 62 RHUR 64

Displacement:

Dimension: Guns:

RHUR 64
2,370 tons standard (2,540 tons full load) Lohn and Lech 2,460 standard, 2,680 full 324½×38½×11½ feet
2—3-9 inch AA. (100 mm.).
4—40 mm. AA. (Lahn and Lech no. 3-9)

Machinery:

4—40 mm. AA. (Lahn and Lech no 3·9) 6 Maybach or Daimler diesels. 2 shafts. Diesel-electric in Isar, Lahn, Lech, Mosel, Saar. B.H.P.: 11.400=22 kts. 110 (extra accommodation for

Complement:

General Elbe, Mosel, Rhein and Ruhr were built by Schlieker-werft, Hamburg, Isar by Blohm & Voss, Hamburg, Weser by Elssflether Werft, Neckar by Lürssen, Bremen-Vegesack, Saar by Norderwerft, Hamburg, Donau by Schlichting, Travemünde, Lahn and Lech by Flender, Lübeck, Main, Werra by Lindenau, Kiel-Friedrichsort, All com-

ESCORT AND SUPPORT SHIPS



ELBE

pleted in 1961-64. Rated as Belgjeitschiffe (tenders) for minesweepers (Isar, Mosel, Saar), submarines (Lahn, Lech), training (Donau, Ruhr, Weser), and motor torpedo boats (others) but these handsome and symmetrical ships of very interesting design, with their 3.9 inch 1964, Wright & Logan

guns and comparatively high speed could obviously be used in lieu of frigates.

Photographs Photographs
A photograph of Rhein appears in the 1962-63 editions, and of Weser in the 1963-64 edition.

TRAINING SHIP

1 Light Cruiser Type

Displacement: Dimension:

4,800 tons normal (5,500 tons full load)

Guns:

Tubes:

full load)
452½ (pp.), 475½ (o.a.)×59×
14½ feet
4—3.9 inch (100 mm.) (single).
6—40 mm. AA. (2 twin, 2 single)
4 for ASW torpedoes, 2 for anti-surface torpedoes.

DEUTSCHLAND A/S weapons: Aircraft:

Machinery:

Complement:

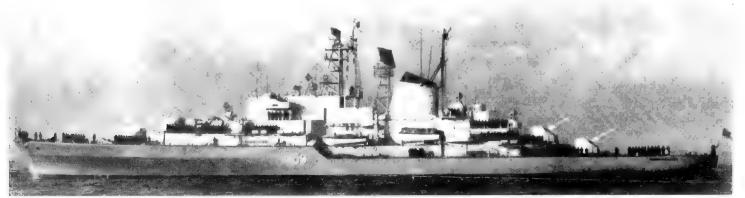
Pennant No. Builders A 59 Nobiskrug, Rendsburg
2 Bofors four barrelled depth
charge mortars (rocket launcher)
1 helicopter
2 Mercedes-Benz and 2 Maybach

rerceqes-Benz and 2 Maybach diesel motors. B.H.P.; 6,680, and geared turbines. S.H.P.; 8,000 3 shafts. Speed=22 kts. 550 (283 ship's company, plus 267 cadets)

Laid down 1959 Launched

Completed 25 May 1963 5 Nov. 1960

First West German naval ship to exceed the post-war limit of 3,000 tons. Large frigate or light cruiser type. Can also be employed as a minelayer. Designed with armament and machinery of different types for training purposes. The name originally planned for this ship was Berlin. Ordered in 1956. Carried out her first machinery sea trials on 15 Jan, 1963.



1964, courtesy Mr. Michael D. J. Lennon

CORVETTES

10 Projected

Displacement: Guided weapons: Tubes Machinery:

circa 2,000 tons
Launcher for "Tartar" missiles
4 anti-submarine homing
Speed circa 25 kts.

General

Projected under the new construction programme. Although designated "corvettes" they more nearly approximate to frigates in size and design.

HANS BURKNER

982 tons standard (1,100 tons full load)
265\frac{1}{2} (o.a.) \times 30\frac{1}{2} \times 10 feet
2-40 mm. AA. (twin mounting)
2-18 inch anti-submarine homing
1 D.C. mortar (four-barrelled) 2 D.C. racks
4 MAN diesels, 2 shafts, 5.H.P.: 13,600=25 kts,
50 Displacement: Dimensions: Guns: Tubes: A/S weapons: Machinery: Complement: 50

Large PCE type, Rated as Type B Torpedofangboote. Built by Atlaswerke, Bremen. Launched on 16 July 1961. Completed on 18 May 1963. Named after the designer of the German pre-First World War battleships, Pennant No. Y 879.



HANS BÜRKNER

1964, Bundesmarine, Official

5 "Thetis" Class

HERMES THESEUS NAJADE THETIS TRITON

Displacement: Dimensions: Guns: A/S weapons: Machinery:

564 tons standard (680 tons full load)
229\frac{1}{2}\times 27\times 7\frac{1}{2}\ feet
2-40 mm. AA. (twin mounting)
Bofors D.C. mortar (Hermes 2 tubes)
2 MAN diesels. 2 shafts. B.H.P.: 6,800=24 kts.
48

Complement:

General Built by Roland Werft, Bremen-Hemelingen. Some have a computer house before the bridge structure. Thetis commissioned on 1 July 1961, Hermes on 16 Dec. 1961, Najade on 12 May 1962, Triton on 10 Nov. 1962, and Theseus on 15 Aug. 1963. Pennant Nos. P 6112, P 6113, P 6115, P 6111 and P 6114, respectively. These Torpedofangboote of advanced type would be used as submarine chasers in wartime. They are provided with a helicopter deck.



NAJADE

1965, Dr. Giorgio Arra

UW 12 (ex-PC 1618, ex-P 9)

325 tons standard (400 tons full load)
170 (pp.)×23×6½ feet
1—40 mm. Bofors AA.; 2—20 mm. AA.
1 Hedgehog. 4 D.C.T., 2 D.C. racks
4 Pielstick-SEMT diesels, B.H.P.: 3,240=18·7 kts.
2,500 miles at 12 kts.; 2,000 miles at 15 kts. Displacement: Dimensions: Guns: A/S weapons: Machinery: Radius:

General Built in France by Dubigeon, Nantes under a U.S.A. off-shore order, Completed in 1955. Purchased by Germany in 1957. Commissioned on 17 Apr. 1957. Submarine chaser of the U.S. PC type. Now in operational reserve. Pennant No.: W 51.



UW 12

1964. Erich Gröner

FAST PATROL BOATS

10 Projected

Displacement: circa 250 tons
Guided weapons: Launcher for "Tartar" missiles
Projected under the new construction programme.
launching system for surface-to-surface missiles.

Reported will have a

COASTAL MINESWEEPERS

CUXHAVEN M 1078 DUREN M 1079 FLENSBURG M 1084 FULDA M 1068 GÖTTINGEN M 1070 KOLBLENZ M 1071

Displacement: Dimensions: Guns: Machinery: Complement:

18 "Lindau" Class KONSTANZ M 1081 LINDAU M 1072 MARBURG M 1080 MINDEN M 1085 PADERBORN M 1076 SCHLESWIG M 1073 1076

TÜBINGEN M 1074 ULM M 1083 VÖLKLINGEN M 1087 WEILHEIM M 1077 WETZLAR M 1075 WOLFSBURG M 1082 1082

370 tons standard (425 tons full load)
137½ (pp.), 147½ (o.a.)×27½×8½ feet
1—40 mm. AA.
Maybach diesels. 2 shafts, B.H.P.: 4,000=16 kts.

General

General Lindau, first German-built vessel for the Federal German Navy since the Second World War, launched on 16 Feb. 1957. Built by Yacht- & Bootswerft, Burmester, Bremen-Burg. Seventeen similar Kustenmineensuchboote were built in German yards in 1958-60. The hull is of entirely wooden construction and laminated with plastic glue. The engines are built of non-magnetic materials. The first six, Göttingen, Koblenz, Lindau, Schleswig, Tübingen and Wetzlar, were modified with lower bridges in 1958-59. Schleswig was lengthened by 6\frac{3}{2} feet in 1960, and all the others in 1960-64.



SCHLESWIG

1965. Erich Gröner

6 "Vegesack" Class

DETMOLD M 1252 HAMELN M 1251

Displacement: Dimensions -Guns:

PASSAU M 1255 SIEGEN M 1254 VEGESACK M 1250 WORMS M 1253

362 tons standard (378 tons full load) 137 $\frac{1}{4}$ (pp.), 144 $\frac{1}{4}$ (o.a.)×26 $\frac{1}{4}$ ×9 feet 2—20 mm. AA. 2 Mercedes-Benz diesels. 2 shafts. B.H.P.: 1,500 =15 kts. Kamewa variable pitch propellers

Built in Cherbourg, under the "off-shore" programme. All launched in 1959-60. A photograph of Vegesock appears in the 1960-61 to 1963-64 editions.



HAMELIN

1964, Wright & Logan

INSHORE MINESWEEPERS

HOLNIS

Displacement: 150 tons

Launched on 22 May 1965 at Abeking af Rasmussen, Lamwerde, as the prototype for nine other binnenminensuchboot (inshore minesweepers).

totype for nine other binnenminensuchboot (Inshore Inhabation | 10 "Niobe" Class

AMAZONE (27 Feb. 1963) GAZELLE (14 Aug. 1963) NIOBE (18 Aug. 1957)

ARIADNE (23 Apr. 1960) HANSA (18 Nov. 1957) NIXE (3. Dec. 1962)

FREYA (25 June 1960) HERTHA (18 Feb. 1961) NYMPHE (20 Nov. 1962)

VINETA (17 Sep. 1960)

VINETA (17 Sep. 196
Type B: 184 tons standard (210 tons full load)
Type A: 150 tons standard (180 tons full load)
Type B: 120 (o.a.)×21½×5½ feet
Type A: 108 (pp.), 113½ (o.a.)×21½×5½ feet
1—40 mm. AA,
2 Mercedes-Benz diesels. 2 shafts. B.H.P.: 1,900=17 kts.
(Hansa: 1 shaft. B.H.P.: 950=14 kts.) Displacement: Dimensions: Machinery: Complement:

Launch dates above. Pennant Nos. W 29, 23, 24, 30, 26, 21, 28, 27, 25 respectively. All were built by Krögerwerft, Rendsburg, Gazelle, was completed on 9 Dec. 1963. Hansa and Niobe are Type A. and the other eight ships are Type B. There are small differences. Some have minesweeping gear. All bear the names of former large or small cruisers, 1897-1900. Ten more Type B boats were ordered from Kröger, Rendsburg in 1963. Formely classifled as patrol boats (Küstenwachboote), but re-rated as inshore minesweepers in 1966.



ARIADNE

1964, Erich Gröner

MOTOR TORPEDO BOATS

1 Modified "Brave" Type

STRAHL P 6194

Displacement: Dimensions:

95 tons standard (100 tons full load)
96 (w.l.), 99 (o.a.)×25×7 feet
2—40 mm. AA. (see Notes)
4—21 inch in side launching chutes. (see Notes)
3 Bristol Siddeley Marine Proteus gas turbines, 3 shafts.
B.H.P.: 12,750=54 kts.
22 (3 officers, 3 petty officers, 16 ratings) Guns: Torpedoes: Machinery:

Complement:

General
Built by Vosper Ltd., Portsmouth. Contract announced on 22 Aug. 1950. Launched on 10 Jan. 1962. Commissioned on 21 Nov. 1962. Of similar design to the "Brave" class fast patrol boats in the Royal Navy. Alternative armaments which can be mounted are: 4—21 inch torpedoes with 1—40 mm. AA. gun; or 2—21 inch torpedoes with 2—40 mm. AA. guns; or 8 ground mines with 1—40 mm. AA. gun. Allen reverse reduction gear boxes, and Rover gas turbino generating machinery. "Strahl" means Beam.



STRAHL

1963, courtesy Vosper Ltd., Portsmouth Builders

I Modified "Ferocity" Type

PFEIL F 6193

Displacement: Dimensions: Guns:

75 tons standard (80 tons full load)
92 (w.l.), 95 (o.a.)×23{×6} feet
2—40 mm. AA.. (see Notes)
2 or 4—21 inch in side launching chutes (see Notes)
2 Bristol Siddeley Proteus gas turbines. 2 shafts.
B.H.P.: 8,500=50 kts.
14 (2 officers, 2 petty officers, 10 ratings) Torpedoes: Machinery:

Complement:

General
Built by Vosper Ltd., Portsmouth. Contract announced on 22 Aug. 1960. Launched
on 26 Oct. 1961. Commissioned on 27 June 1962. Based on the design of Ferocity,
the Vosper private venture prototype. Alternative armaments which can be mounted
are: 4—21 inch torpedoes with 1—40 mm. AA. gun; or 2—21 inch torpedoes with
2—40 mm. AA. guns; or 8 ground mines with 1—40 mm. AA. gun. Allen reverse
reduction gear boxes and Rover gas turbine generating machinery. "Pfeil" means
Arrow.



PFEIL (as gunboat)

1966, Stefan Terzibaschitsch

2 "Nasty" Type

HUGIN P 6191 Displacement: Dimensions:

MUNIN P 6192 70 tons standard (75 tons full load)
75½ (pp.), 80½ (a.a.)×24½×6½ feet
2—40 mm. Bofors AA. (Munin 1—40 mm. only)
4—21 inch originally (Munin 2—21 inch)
2 Napier Deltic turbo blown diesels, B.H.P.: 6,200=

Guns: Tubes: Machinery:

43 kts. 18 to 22 Complement:

General Ordered from Boat Services Ltd., A/S., Norway, in May 1959 and commissioned on 5 Nov. 1960. Armament now modified. Placed in Reserve in Jan. 1964.

Both lent to Turkey in Aug. 1964, and temporarily re-named Dogan and Marti. A photograph of Hugin appears in the 1962-63 to 1965-66 editions.

A photograph of Pfeil as torpedo boat appears in the 1964-65 and 1965-66 editions, and a builders photograph on completion in the 1962-63 and 1963-64 editions. Disposals

UW 10 (ex-FPB 5030, ex-S 130) and UW 11 (ex-FPB 5208), former mot torpedo boats rated as training vessels, were deleted from the list in 1964.



HUGIN

1966, Official

Motor Torpedo Boats-continued

40 "Jaguar" Class

GEPARD P 6098
GREIF P 6071
HABICHT P 6075
HÄHER P 6087
HERMELIN P 6095
HYANE P 6099
ILTIS P 6058
JAGUAR P 6059
KONDOR P 6070
KORMORAN P 6077
KORMORAN P 6077
KORMORAN P 6077
FINGUIN P 6090
160 tons standard (190 tons full load)
138×22×5 feet
2—40 mm. AA. (single)
4—21 inch
(2 torpedo tubes can be mercedee p ALBATROS P 6069 ALK P 6084 BUSSARD P 6074 DACHS P 6094 DOMMEL P 6091 ELSTER P 6088 FALKE P 6072 FRETTCHEN P 6100 FUCHS P 6066 GEIER P 6073 PUMA P 6097
PEIHER P 6089
SEEADLER P 6068
SPERBER P 6076
STORCH P 6085
TIGER P 6082
WEIHE P 6082
WUSEL P 6092
ZOBEL P 6092

Displacement: Dimensions: Gunst

Tubes:. Mines: 7—L1 Incn (2 torpedo tubes can be removed for 4 mines) Mercedes-Benz or Maybach 20 cyl, diesels, 4 shafts. B.H.P.: 12,000=42 kts. Machinery: 33

Complement: 33
32 boats were built by Fr. Lürssen, Bremen-Vegessack in 1957-62 and the remaining eight by Krögerwerft, Rendsburg in 1958-64. Of composite construction, with steel frames, mahogany diagonal carvel hulls, alloy bulkheads and superstructure. Kormoran commissioned on 9 Nov. 1959, Kranich on 19 Dec. 1959, Alk on 14 Jan 1960, Storch on 12 Mar. 1960. Pelikan on 30 Mar. and Häher on 5 Apr. 1960. Dachs, Frettchen, Gepard, Hermelin, Hyäne, Nerz, Ozelot, Puma, Wiesel and Zobel are of improved "1960" type with a different bridge. The others are "1955" type. A photograph of Jaguar appears in the 1958-59 to 1961-62 editions. Ten units of the "Jaguar" class will be fitted with a launching system (surface-to-surface) for "Tartar" missiles in the same way as in the new fast patrol boats.



GEPARD (modified type)

1964, Wright & Logan



WOLF

1964. Erich Gröner



HÄHER

5 "Silbermowe" Class

EISMÖWE (ex-S 1) P 6055 RAUMPÖWE (ex-S 2) P 6056

SILBERMÖWE (ex-Silver Gull) P 6052 STURMMÖWE (ex-Storm Gull) P 6053 WILDSCHWAN (ex-Wild Swan) P 6054

110 tons standard (155 tons full load)
116×16½×6 feet
1—40 mm, AA., 4—20 mm, AA.
2—21 irich Displacement: Dimensions: Guns: Tubes: Machinery:

3 Mercedes-Benz 20 cyl. diesels, B.H.P.: 7,500=38 kts. last three B.H.P.: 9000=40 kts.

Radius:

Complement:

General
German S-boote type. Built by Lürrsen, Vegesack, Silver Gull, Storm Gull and Wild Swan in 1952-55, and \$1, \$2 and \$3 in 1955-56. First two commissioned 2 July 1956, third 23 Apr. 1957. Pennant Nos, above. Sister boat Seeschwolbe, P 6057 (ex-\$S\$), renamed UW 9 and rated as a training vessell in 1961, was taken out of service on \$1 Jan. 1964 (still exists, but decommissioned). A photograph of Silbermöwe appears in the 1960-61 and 1961-62 editions.



EISMÖWE

1962, Erich Gröner

FAST MINESWEEPERS

30 "Schutze" Class

ALGOL M 1068 ATAIR M 1067 CAPELLA M 1098 CASTOR 1051 DENEB M 1064 FISCHE M 1096 GEMMA M 1097 1097 M 1 HERKULES 1095

SPICA M 1059 STEINBCK M 1091 STIER M 1061 URANUS M 1099 WAAGE M 1063 WEGA M 1069 WIDDER M 1094

Displacement: Dimensions: Guns: Machinery:

SKORPION M 1060

200 tons standard (226 tons full load)

144½ (pp.), 154½ (o.a.) × 22½ × 7½ feet

1—40 mm. AA. (2—40 mm. AA. designed). Atair
Gemma, Pegasus have 2—40 mm. (See General notes)

Maybach ditsels. 2 shafts. Escher-Wyss propellers (see General notes.)

B.H.P.: 3,600=24.5 kts.

Complement:

Complement: 39
General
Algal, Capella, Castor, Fische, Gemma, Krebs, Mars, Mira, Orlon, Pollux, Regulus, Rigel, Schütze, Sirius, Skorpion, Spica, Steinback, Stier, Waage and Wega were built by Abeking & Rasmussen, Lemwerder, Deneb, Jupiter, Piuto, Uranus and Widder by Schurenstedt, Bardenfi., Atair, Herkules, Neptun, Pegasus and Perseus by Schiichting. Travemünde. The design is a German type of fast minesweeper, a development of the "R" boats of the Second World War. All the units of this class are named after stars. The first four boats originally had Voith Schreider propellers, but all now have Escher-Wyss propellers. Schütze commissioned on 14 Apr. 1959. Gemma on 10 May 1960. Stier carries no weapons, but has a decompression chamber, being security vessel for submarines, Pennant Nos. above. All completed by 1964. Formerly classified as inshore minesweepers, but re-rated as fast minesweepers in 1966.



JUPITER

1966, Wright & Logan



PEGASIIS

1963, Wright & Logan

OT 1 (ex-Jupiter, ex-R 146)
Displacement: 150 tons
Dimensions: 135 × 19 × 5½ feet
Guns: 2—20 mm. AA. or 4—20 mm. AA.
Diesel. B.H.P.: 2,200=19 kts. 2 Voith-Schneider propellers

Germany in 1956. Capella, Mars,
1959 to be accommoduties. General Transferred by U.S. Navy, being returned to Germany in 1956. Capella, Mars, Pollux, Strius and Spica were stricken from the list on 20 Feb. 1959 to be accommodation hulks without engines. Jupiter was renamed OT 1 for asdic training duties, and R 150, renumbered UW 5, as a training vessel for the submarine weapons school. Regulus (ex-R 137) was renamed AT 1 in 1962 for naval gunnery training, but was scrapped on 16 Jan, 1964, and Saturn (ex-R 147) was renamed TF 105 (Torpedofangboot in 1963, but was disposed of in 1964. Orlon (ex-R 132) and Rigel (ex-R 135) were disposed of in 1961, and Castor (ex-R 138) in 1962. Merkur (ex-R 134), Pennant No. W 68 (ex-M 1066) is employed as security vessel for sub-

ALDEBARAN (ex-R 131, ex-R 91)

UW 4 (ex-R 149, ex-R 102)

Displacement:

Dimensions:

Machinery:

125 tons
124 × 19 × 4½ feet
1—20 mm. AA.
2 MAN diesels, B.H.P.: 1,840=20 kts.
2 Voith-Schneider propellers

General

2 Volta-Schneider propeliers

UW 4, a training vessel for the submarine weapons school, was transferred to the Erprobungstelle für Marinewaffen in Jan. 1964 Atair (ex-R 145, ex-R 76) was taken out of commission in 1960. Algol (ex-R 148, ex-R 99), Deneb (ex-R 141, ex-R 127) and Pegasus (ex-R 143, ex-R 68) were disposed of in 1961, Skorpion, ex-R 139, ex-R 120) and Wega (ex-R 130, ex-R 67) in 1962, and Arkturus (ex-R 151, ex-R 128) on 31 May 1963. Aldebaran is now a vessel for mine-divers.

Of the 140-ton "R" boats, OT 1 (ex-R 153, ex-R 407) was taken out of service or 20 Feb. 1959 and replaced by Jupiter, renamed OT 1, AT 1 (ex-R 152, ex-R 266) was decommissioned on 15 Feb. 1961, and AT 2 (ex-R 154, ex-R 406) and UW 6 (ex-R 155, ex-R 408) were disposed of in 1963.



ALDEBARAN

1964, Wright & Logan

COASTAL PATROL BOATS

FM 1 (ex-W 7, ex-Pierre Mené)
FM 2 (ex-W 8, ex-Malgré Tout)
TM 1 (ex-W 10, ex-Adrien Magnier)
TM 1 (ex-UW 3, ex-W 12, ex-No. 186)
TM 2 (ex-UW 2, ex-W 11, ex-Miss Andrée)

140 tons 118×22×11 feet 1—20 mm. AA. I Fairbanks-Morse diesel. B.H.P.: 450=11 kts. Guns: Machinery: Oil fuel: 23

Radius: Complement: 3.300 miles

Ex-Canadian built MMS 1 with high fo'c'sle. Were Belgian fishing vessels before being bought and rebuilt in Germany. Re-rated training vessels in 1957. FM boats for fernmeldeshule (telecommunications). UW 1 for underwater training and TM-boats for divers. FM 3, ex-W 9, was taken out of service on 3 Oct. 1959, and UW 2 was renamed TM 2. Pennant Nos.: W 54, 55, 44, 53 and 45 respectively. A photograph of TM 2 appears in the 1962-63 to 1965-66 editions.



FM 1

Added 1966, Official

KW 15 (ex-H 15) KW 16 (ex-H 16)

Displacement: Dimensions: Guns-Machinery:

KW 17 (ex-H 17) KW 18 (ex-H 18) KW 19 (ex-H 19) KW 20 (ex-H 20) KW 18 (ex-H 18) KW 20 (ex-H 20) 45 tons standard (60 tons full load) 83 (pp.), $93\frac{1}{2}$ (o.a.) $\times 15\frac{1}{2} \times 4$ feet 2—20 mm. AA. (KW 19, 4—20 mm. AA.) 2 Mercedes-Benz diesels. 2 shafts. B.H.P.: 1,600=25 kts. (last three, B.H.P.: 2,000=over 25 kts.) 18

Complement 18

Formerly USN 54, 55, 56, 57, 58, 59 ex-Weser River Patrol boats, Launched in 1951-53. Pennant Nos.: W 15-20. Re-rated as Küstenwachboote in 1960. KW 19 was allocated to the Gunnery School as a training vessel, but is now at Borkum naval base as a versetzboot (transfer boat). KW 19 was placed in reserve on 10 Nov. 1965. KW 15, KW 16, KW 17 and KW 20 have been transferred to the Bundesgrenzschutz (frontier police sea) and renumbered BG 1—4.



KW 17

Guns: Machinery:

1962, Erich Gröner

(ex-H 6, ex-W 15) (ex-H 7, ex-W 16) (ex-H 8, ex-W 17)

(ex-H 1, ex-KFK 309) (ex-H 2, ex-W 2, ex-KFK 613) (ex-H 3, ex-W 3, ex-KFK 561)

Displacement:

112 tons $78\frac{3}{4} \times 22 \times 9$ feet 1—20 mm, AA, 1 diesel motor. B.H.P.: 150=9 kts. 1,200 miles

Radius: Complement: 16

General

General
KFK (Kriegsfischkutter) type picket boats (wachtboote). Launched in 1943. Rebuilt
in 1951-52. Rated as Hafenschutzboote (harbour defence boats) until 1960 when they
were re-rated as Küstenwachboote. Pennant Nos.: W 1, 2, 3, 6, 7, 8, respectively.
KW 4, KW 5, KW 9 and KW 10 given to Tanzania (shipped on 8 Dec. 1963.



KW 6

1966. Official

FL 9 (ex-R.A.F. 2763) FL 10 (ex-R.A.F. 2765) FL 11 (ex-R.A.F. 2766)

Displacement:

Dimensions: Machinery:

70 tors $95\frac{1}{5}\times16\frac{1}{2}\times4\frac{1}{4} \quad \text{feet} \\ \text{Maybach diesels} \quad 2 \quad \text{shafts. B.H.P.: } 3.200=30 \quad \text{kts.} \\ 600 \quad \text{miles at } 20 \quad \text{kts.} \\ \end{cases}$ Built by Kröger, Rendsburg. Former Flugsicherungsboote of the R.A.F. List/Sylt. Commissioned on 1 Sep. 1961. Pennant Nos.: Y 861, Y 862 and ne R.A.F. station 862 and Y 863.

MINELAYERS

3 Ex-U.S. LST Type

BAMBERG (ex-U.S.S. Greer County, LST 799) N 122 (ex-A 1403) BOCHUM (ex-U.S.S. Rice County, LST 1089) N 120 (ex-A 1404) BOTTROP (ex-U.S.S. Saline County, LST 1101) N 121 (ex-A 1405)

Displacement: Dimensions: Guns: Machinery: Oil fuel:

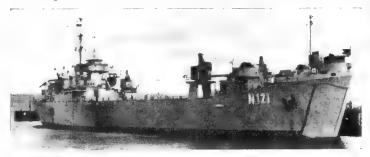
Radius:

1,653 tons standard (4,080 tons full load)
316 (w.l.), 328 (o.a.)×50×14 feet
10—40 mm. (3 twin, 2 single)
2 G.M. diesels. 2 shafts. B.H.P.: 1,700=11 kts.

15,000 miles at 9 kts.

General

Former United States tank landing ships of the 511-1152 series transferred in 1961. All converted into minelayers. Commissioned on 6 Feb. 1964. A photograph of Bamberg (as LST A 1404) appears in the 1962-63 and 1963-64 editions.



BOTTROP

1964, Erich Gröner

MEDIUM LANDING SHIPS (ROCKET)

2 Ex-U.S. LSMR Type

NATTER (ex-Thames River, LSM(R) 534) OTTER (ex-Smyrna River, LSM(R) 532)

Displacement: Dimensions: Guns:

994 tons (attack), (1,084 tons full load)
204½ (w.l.), 206¼ (o.a.) \times 34½ \times 7½ feet
1—5 inch, 4—40 mm. AA. (twin), 8—5 inch rocket

Machinery: Oil fuel: Radius:

projectors
G.M. diesels. 2 shafts.
60 tons
2,500 miles at 12 kts. diesels. 2 shafts. B.H.P.: 2,800=12.6 kts.

100

Complement: General

Former United States Medium Landing Ships (Rocket), Rated as Landungsünterstützungsboote (see Notes below). Pennant Nos. L 755 and L 754 respectively.



NATTER

1960, Bundesmarine, Official

MEDIUM LANDING SHIPS

4 Ex-U.S. LSM Type

EIDECHSE L 751 (ex-U.S.S. LSM 491) SALAMANDER L 752 (ex-U.S.S. LSM KROKODIL L 750 (ex-U.S.S. LSM 537) VIPER L 753 (ex-U.S.S. LSM 558)

Displacement: Dimensions: Guns:

Machinery: Oil fuel: Radius: Complement:

60 torrs

2,500 miles at 12 kts.

General Rated as Landungsboote. All the above six landing ships (two LSM(R) and four LSM types) were purchased from the United States for about \$6.000.000, and transferred to Germany on 5 Sep. 1958 at Charleston S.C. Refitted in 1959. They constitute the German Landungsgeschwader No. 2. A large port quarter oblique aerial view of Viper appear in the 1960-61 edition (Page 434, Addenda), and a starboard bow surface view of Salamander in the 1960-61 and 1961-62 editions. Krokodil has a landing deck for helicopters aft, and all the squadron could be so fitted.



KROKODIL (helicopter landing deck aft)

1962, Wright & Logan

LANDING CRAFT

I Ex-U.S. LCU, ex-LCT (6) Type

LCU 1 (ex-U.S.S. LCU 779, ex-LCT (6) 779)

Displacement: Dimensions: Machinery:

160 tors | light (320 tons full load) | 105 (pp.), | 119 (o.a.) × 32 \(\frac{2}{3}\) × 5 (max.) feet | Diesels. 3 shafts. B.H.P.: 675=10 kts.

General

Former American utility landing craft of the LCT (6) type transferred from the U.S.A. under the Military Aid Program.



LCU I

1963, Bundesmarine, Official

BRASSE L 789

BUTT L 788

Commissioned at Blohm & Voss on 7 May 1965, with 26 of the type to follow.

In Dec. 1961 four landing craft were ordered from Schlickerwerft, Hamburg, and delivery was planned for 1962, but the firm relinquished the contracts which were taken over by Blohm & Voss.

REPAIR SHIPS

2 Ex-U.S. ARB, ex-LST Type

ODIN (ex-U.S.S. Diomedes, ARB 11, ex-LST 1119)

WOTAN (ex-U.S.S. Ulysses, ARB 9, ex-LST 967)

Displacement: 1,625 tons light (4, 0 tons full load)

Dimensions: 316 (w.l.), 328 (o.a.)×50×11 feet

Guns: 8—40 mm, AA.

Machinery: 2 G.M. dissels. 2 shafts. B.H.P.: 1,800= 11.6 kts.

Oil fuel: 600 tons

15,000 miles at 9 kts. Radius:

General Transferred under MAP in June 1961. Odin commissioned in Jan, 1966 and Wotan on 2 Dec. 1965.

2 Ex-U.S. LST Type

Ex-U.S.S. MILLARD COUNTY, LST 987 Ex-U.S.S. MONTGOMERY COUNTY, LST 1041

Displacement: Dimensions: Machinery: Oil

1,650 tons standard (4,080 tons full load) 316 (w.l.), 328 (o.a.) \times 50 \times 14 feet 2 G.M. diesels. 2 shafst. B.H.P.: 1,700=11 kts. 600

fuel:

15,000 miles at 9 kts.

Radius: General

Purchased in 1960 for conversion into repair ships similar to the U.S. ARB type.

WIFLAND

Displacement: Dimensions:

130 tons $121\frac{1}{2} \times 19\frac{2}{3} \times 5$ feet

General

General

Repair ship of the former German Navy. Commissioned on 10 Aug. 1956. Rated as schimmwerkstattchiff (floating workshop). Pennant No.: Y 804.

MEMMERT (ex-U.S.N. 106, ex-India, ex-BP 34)

Measurement:

270 tons gross 100 (pp.), $108\frac{1}{4}$ (o.a.) \times 31 \times 5 $\frac{1}{4}$ feet 2 diesels, 2 shafts,

Machinery:

General Salvage vessel wthi a derrick. Built in 1940 at Walsum (Rhine river). Rated as Torpedoklarmachschift (torpedo repair ship). Penant No.: Y 805. Crew of five.

RESCUE LAUNCHES

4 "KW" Type

FL 5 (ex-H 11, ex-P 1) FL 6 (ex-H 12, ex-P 2) Displacement:

FL 7 (ex-H 13, ex-P 3) FL 8 (ex-H 14, ex-P 4) 45 tons standard (60 tons full load) 83 (pp.), 93½ (o.a.) × 15½ × 4 feet 2 Mercedes-Benz diesels. B.H.P. 2,000=25 kts.

Dimensions: Machinery: Complement:

Built 1951-52. All are similar to U.S. Coast Guard 93-ft. type. Formerly rated as harbour defence vessels, but re-rated as Flugsicherungsboote (employed as air/sea rescue launches) in 1959. Pennant Nos.: Y 857-860 (ex-W 11-14). Guns removed

Recent Disposals

FL 1 (ex-FL 51, ex-MSM 2) was disposed of in 1962. FL 4 (ex-Falke, ex-FL 4),
a smaller type of aircraft rescue boat, was also disposed of in 1962.

FL 2 (ex-FL 52, ex-MSM 3) and FL 3 (ex-FL 50 ex-MSM 1), ex-German Air

Force sea rescue launches, were disposed of on 2 Aug. and 1 Aug. 1963, respectively.



FL 5

1962, Erich Gröner

DEPOT SHIPS AND TENDERS

EIDER (ex-Catherine, ex-Dochet)

TRAVE (ex-Caroline, ex-Flint)

Displacement: Dimensions: Guns: Machinery:

480 tons standard (750 tons full load) 164 (pp.), $177\frac{1}{6}$ (o.a.) \times $27\frac{1}{5}$ \times 14 feet 1—40 mm. AA., 1—20 mm. AA. Elder: Triple expansion. 1 shaft. 1.H.P.: 750=12 kts.

Trave: Mercedes-Benz diesels. 1 shaft. B.H.P.: 900=12

kts. Trave: 153 tons, Eider: 130 tons

Complement:

Fuel:

Former British "Isles" bype minesweepers (trawlers). Built in Canada. Trave converted from steam (triple expansion) to diesel-electric propulsion. Photograph of Trave in the 1957-58 to 1959-60 editions. Eider is employed as a mine clerance vessel. Pennant Nos. A 50 and A 51, respectively.



EIDER

Added 1966, Wright & Logan

EMS (ex-U.S.N. 104, ex-Harle). Pennant No. A 53

Measurement: Dimensions: Guns: Machinery:

 $\begin{array}{lll} 660 & tons & gross \\ 185\frac{3}{2} & (o.a.) \times 29 \times 15\frac{1}{2} & feet \\ 4-20 & mm. \\ Sulzer & diesels. & B.H.P.; & 1,000=12 & kts. \\ \end{array}$

Built in 1941 by Kremer & Sohn, Elmshorn. Commissioned on 11 Dec. 1956.



FMS

1966, Official

OSTE (ex-U.S.N. 101, Puddefjord). Pennant No.: A 52

Measurement:

Dimensions:

567 tons gross $160\times29\frac{1}{7}\times17$ feet 2 —20 mm. AA. 2 Sulzer diesels, 1 shaft. B.H.P.: 1,400=14 kts.

Machinery:

Built in 1943 at Akers Mekaniske Vaerkstad, Oslo. Taken over from the U.S. Navy.

WS 1 (ex-City of Havana, ex-José Marti, ex-Northway, ex- LSD 11)

Displacement: 4,790 tons standard (9,375 tons full load) 454 (w.l.), $457\frac{1}{5}$ (o.a.) \times 72 $\frac{1}{5}$ \times 18 (max.) feet S.H.P.: 7,000=15 kts.

Boilers: General

Built for the U.S. Navy as a Landing Ship, Dock by the Newport News Shipbuilding & Dry Dock, Co., Newport News, Virginia. Launched in 1943. Transferred to the United Kingdom as Northway on 15 Feb. 1944 under lease lend. Purchased by Germany in 1962 from the West Indian Fruit & S.S. Co., Inc. Norfolk, Virginia. Employed as accommodation ship (Wohnschiff)



WS I

1965, Stefan Terzibaschitsch

FRIEDRICH VOGE (ex-Kurefjord, 1943) Former tug. Pennant No. Y 888.
Measurement: 179 tons gross
Machinery: Diesel. B.H.P.: 500

KARL KOLLS (ex-Salmo, ex-Gerda 1, ex-Margarethe, ex Nora) Y 887

Measurement: Machinery:

189 tons gross H.P.: 160

Both experimental tenders of the Erprobungstelle für Marinewaffen in Eclernförde. Karl Kolls, former small freighter, is fitted with one torpedo tube.

OTTO MEYCKE Pennant No. Y 882 Taucherboot (diving boat). Fishing cutter type.

SUPPLY SHIPS (Tross-schiffe)

2 "Angeln" Class

ANGELN (ex-Borée) A 1408

DITHMARSCHEN (ex-Hébé) 1409

Measurement:

2,111 tons gross Machinery:

Pielstick diesels 1 shaft, B.H.P: 3.000=17 kts.

General

Both built by Ateliers et Chantiers de Bretagne, Nantes. Purchased from shipowners S. N. Caënraise, Caen. Launched in 1954-55. Commissioned on 27 Nov.
1959 and 19 Dec. 1959, respectively. Rated as Materialtransporter. A photograph
of Angeln appears in the 1961-62 to 1964-65 editions.



DITHMARSCHEN

1963. Giorgio Arra

SCHWARZWALD (ex-Amalthee)

Measurement:

Guns: Machinery:

1,103 tons gross 4—40 mm. AA. Bofors Sulzer diesel, B.H.P.: 3,000=17 kts.

neral Built by Ch. Dubigeon, Nantes. Launched 31 Jan. 1956. Purchased from Soc. Navale Ennaise in Feb. 1960. Commissioned as ammunition transport. *Pennant No.* A Caënnaise



SCHWARZWALD

1963, Stefan Terzibaschitsch

eneral Built by Atlas Werke, Bremen. Conpleted in 1953. Purchased in 1960 for service ith the armed forces' supply organisation. In service 1960. Pennant No.: Y 830.



SAUERLAND

General
Built by W. & E. Sielaff Büsum. Completed in 1956. Purchased in 1960 for service with the armed forces' supply organisation. In service 1960, Pennant No.: Y 831. SIEGERLAND (ex-Leuchtenburg 3)

Measurement: 280 tons gross, 350 tons deadweight

Built in 1952. Material-Versorger. Pennant No.: Y 832

COBURG New construction ammunition transports launched on 15 Dec. 1965 and 3 May 1965, respectively.

SAIL TRAINING SHIPS

GORCH FOCK

Displacement: 1,760 tons standard (1,870 tons full load) 229 $\frac{1}{2}$ (w.l.), 257 (o.a.) \times 39 $\frac{1}{4}$ \times 15 $\frac{1}{2}$ feet Auxiliary M.A.N. diesel, B.H.P.; 800=11 kts. 21, 141 sq. ft. (speed of up to 15 kts. under sail) 1,990 miles Dimensions: Machinery: area; Radius: 1,990 miles 206 (10 officers, 56 ratings, 140 cadets)

Complement: General

General
Sail training ship of the improved "Horst Wessel" type. Barque rig. Launched by Blohm & Voss, Hamburg, on 23 Aug. 1958 and commissioned on 17 Dec. 1958.
NORDWIND

Displacement:

100 tons $78\frac{1}{4}\times22\times9$ feet Diesel, B.H.P.: 150=8 kts. (Sail area 2,037½ sq. ft.) Dimensions: Machinery:

Ketch, ex-Kreigsfischkutter (KFK). Photograph in the 1954-55 edition. There are other vessels of various sailing types: Achat, Argonaut, Borasco, Diamont, Dompfoff, Flibustier, Freibeuter, Geuse, Gödicke Michel, Gunnar, Hadubrand, Hunding, Kaper, Klipper, Korsar, Kuckuck, Likendeeler, Magellan, Mime, Mistral, Monsun, Nachtigall, Ortwin, Ostwind, Pampero, Samum, Schirocco, Seeteufel, Slegmund, Störtebecker, Taifun, Tornando, Westwind, Wiking, Vitalienbrüder,

OILERS

EIFEL (ex-Friedrich Jung) A 1429

2.279 tons light (4,700 tons full load) 3,444 tons gross, 4,720 tons deadweight $334\times47\frac{1}{4}\times23\frac{1}{7}$ feet H.P.: 3,360=14 kts. Displacement: Dimensions:

Machinery:

Built in 1958 by Norder-Werft, Hamburg, Purchased in 1963 for service as an oiler in the Bundesmarine. Commissioned on 27 May 1963,



1964. Erich Gröner

HARZ (ex-Claere jung) A 1428

1,308 tons light (3,696 tons full load) 2,594 tons gross, 3,755 tons deadweight $303\frac{1}{6} \times 43\frac{1}{2} \times 21\frac{3}{6}$ feet H.P.: 2,520=13 kts. Displacement: Measurement:

Dimensions:

Built in 1953, by Norder-Werft, Hamburg. Purchased in 1963 for service as an oiler in the Bundesmarine. Commissioned on 27 May 1963. WALCHENSEE

New Construction

Four medium type oilers of 4,500 tons displacement and four small type oilers of 1,200 tons displacement were included in the new construction programme. Walchensee was lauriched on 10 July 1965.

FRANKENLAND (ex-Münsterland, ex-Powell) Y 827

Displacement:

16,310 tons 11,700 tons gross 521\frac{1}{4} \times 70\frac{1}{4} \times 37\frac{1}{2}

Dimensions: feet

Machinery: Diesels. B.H.P.; 5,800=13-5 kts.

Built by Lithgows, Glasgow. Launched in 1950. Commissioned on 29 Apr. 1959.



FRANKENLAND

1966, Skyfotos

JEVERLAND (ex-Ammerland, ex-Kongsdal) Y 826

Displacement: 14.890 tons Measurement:

Dimensions:

9,949 tons gross 492½ × 66 × 36½ feet Diesels. B.H.P.: 4,100=12 kts. Machinery:

Built by Vulkan, Bremen. Launched in 1937. Commissioned on 29 Apr. 1959. BODENSEE (ex-Unkas) WITTENSEE (ex-Sioux)

1,200 tons
1,230 tons deadweight, 980 tons gross
208½ × 32½ × 15 feet
Diesels, B.H.P.: 1,050—1,250=12 kts. Displacement: Measurement:

Dimensions: Machinery:

Built by P. Lindenau, Kiel-Friedrichsort. Launched on 19 Nov. 1955 and on 23 Sep. 1958, respectively. Commissioned on 26 Mar. 1959. These ships are nearly identical. Permant. Nos.: A 1406 and A 1407, respectively.

ti) MUNSTERLAND (ex-Angelo Germana) 6,200 tons gross (Emsland), 6,191 tons (Münsterland) 461 × 54½ × 25½ feet
Diesel. C.R.D.A. B.H.P.: 4,800 (Emsland), Fiat B.H.P., 5,500 (Münsterland)=13 kts. EMSLAND (ex-Antonio Zotti) Measurement; Dimensions:

Machinery:

Built by C.R.D.A. Monfalcone, and Ansaldo, Genoa, respectively. Both launched in 1943. Completed in 1947 and 1946, respectively. Purchased in 1960 from Italian owners. Converted in 1960-61 by Schliekerwerft, Hamburg, and Howaldswerke, Hamburg, respectively Commissioned on 7 Nov. 1961 and 16 Oct. 1961. Civilian crew. Pennant Nos.: Y 828 and Y 829, respectively.



EMSLAND

1965, Skyfotos

BORKUM (ex-U.S.N. 105, ex-Borkum) Y 824

Measurement:
Dimensions:
Machinery:
General Displacement:

450 tons 265 tons gross 124½×26½×12 feet Diesels, Speed=6 kts.

Built by Flender Lübeck. Launched in 1939. Former German motor tanker.

EUTIN (ex-Ramsöy) Y 825 Displacement: 410 tons

Machinery: Speed=6 kts.

Built by Menzer, Geesthact. Launched in 1943, Commissioned on 1 July, 1956.

TRIALS VESSELS

ADOLF BESTELMEYER (ex-BYMS 2213) HERMAN VON HELMHOLTZ
H. C. OERSIED (ex-Vinstra, ex-NYMS 247) RUDOLF DIESEL (ex-BYMS 2279)

270 tons standard (350 tons full load) 136 \times 24 $\frac{1}{4}$ \times 8 feet 2 diesels. 2 shafts. B.H.P.: 1,000=15 kts Displacement: Dimensions:

Machinery:

Of U.S. YMS type. Build in 1943. Adolf Bestelmeyer and Rudolph Diesel are used for gunnery purposes. No.: Y 881 (Adolf Bestelmeyer), Y 889 (Rudolph Diesel H. C. Oersted, Y 877, was acquired from the Royal Norwegian Navy, Herman von Helmholtz, Y 878, commissioned on 18 Dec. 1962, is used as a degaussing ship.



ADOLF BESTELMEYER

1962, Erich Gröner

TF 104

VIKTORIA (ex-Herzog Friedrich) Y 808

Measurement: Dimensions:

111 tons gross $84\frac{3}{2}\times16\frac{1}{4}\times8\frac{1}{4}$ feet 1 Deutsche Werke diesel. B.H.P.: 240

Machinery: Built in 1901. Commissioned on 1 Dec. 1960 as an experimental vessel,

TF 102 TF 103 TF 101 Displacement: 35 to 40 tons

Dimensions: Machinery:

59 to 80½×14×5 feet Speed=18 to 22 kts.

Of the admiral's barge type, Torpedo recovery boats. Built in 1939-40. TF 101-104 are in the Erprobungstelle für Marinewaffen (experimental station for N weapons). Pennant No.: Y 883, Y 884, Y 885, Y 886, Y 835, respectively. **TF 25**

TF 26

Displacement:

25 tons 74×13½×4 feet Diesels: 1 shaft, B.H.P.: 320=14½ kts. Dimensions: Machinery:

Former German Air Force torpedo recovery boats. Patrol vessels employed as training tenders. Pennant No.: Y 806 and 807.

FF 1

Trials vessel commissioned on 30 Nov. 1961. Pennant No. Y 890.

Surveying Vessels

Surveying vessels include Metear (1964), Süderoog, Gauss, Hooge, Ruden, Atalr, Rungholt and Wego but all these belong to the Federal Ministry of Transport. Fishery Protection Vessels

Fishery Protection Vessels include Poseidon, Anton, Dohrn, Meerkatze, Frithlof and Uthorn but all these belong to the Federal Ministry for Agriculture and Fisheries.

TUGS

FEHMARN

HELGOLAND

Salvage tugs with diesel-electric propulsion of 4,000 B,H.P. and speeds of 16:5 kts. Launched on 25 Nov. 1965 and 8 Apr. 1965, respectively.

AMRUM

FÖHR

NEUWERK

262 tons standard $100\frac{2}{3}$ (o.a.)×25 $\frac{1}{3}$ feet I Deutz diesel B.HP.: 800=12 kts. Displacement: Dimensions:

Machinery: Built by Fr. Schichau, Bremerhaven, Launched in 1961, All completed and commissioned in 1962-63. Pennant Nos.: Y 822, Y 821, Y 823, and Y 820, respectively. **EISYOGEL**

560 tons standard Displacement: Dimensions:

125\(\frac{1}{2} \) (o.a.) \times 31\(\frac{1}{2} \times 7\) (15\(\frac{1}{6} \) max.) feet

Can carry 1—40 mm, AA, Bofors

2 Maybach diesels, 2 shafts, B.H.P.: 2,400=13 kts. Guns: Machinery:

Built by J. G. Hitzler, Lauenburg, Launched on 9 June 1960 and 28 Apr. 1960, respectively and commissioned on 1 Nov. 1961 and 11 Mar. 1961. Can serve as icebreakers or tugs. Pennant Nos. A 1402 and A 1401, respectively.

PASSAT (ex-U.S.N. 103, ex-Passat)

Displacement:

Displacement: Machinery:

460 tons $118\times26\frac{1}{4}\times13$ feet Diesels. B.H.P.: 650=11 kts.

Built at eutsche Werke, Kiel. Launched in 1936, Commissioned on 30 Nov. 1956, Pennant No.: Y 800.

PELLWORM (ex-U.S.N. 102 (ex-Pellworm)

Displacement:

500 tons 276 tons grass 127×28×113 feet 1 diesels. 1 shaft, B.H.P.: 800=12 kts.

Pellworm was built in 1939 at Schichau, Königsberg. Commissioned on 1 Nov. 1956. Pennant No.: Y 801

PLON

General

101 tons gross H.P.: 350 Machinery:

Tug for Kiel purchased in 1956. Pennant No.: Y 802.

NORDSTRAND Y 817 (25 Feb. 1959) 1958) SCHARHÖRN Y 815 (2 Jan. 1959) TRISCHEN Y 818 (7 Apr. 1959) 958) VOGELSAND Y 816 (21 Jan. 1959) BLAUORT Y 803 (1 Dec. 1960) KNECHTSAND Y 814 (18 Dec. 195 LANGENESS Y 819 (29 Apr. 1959) LUTJE HÖRN Y 812 (1 Oct. 1958) MELLUM Y 813 (10 Nov. 1958)

General

Small harbour tugs. Pennant Nos. and commissioning dates against names above.

GERMANY (EAST)

Personnel

Mercantile Marine

Commander-in-Chief, Volksmarine: Rear Admiral Willi Ehm Chief of Naval Staff: Rear Admiral Heinz Neukirchen

1966: 11,000 (1,000 officers, 10,000 men)

Lloyds Register of Shipping: 274 vessels of 591,106 tons gross

MLR 615

MLR 616

FRIGATES

4 Ex-U.S.S.R. "Riga" Type

ERNST THALMANN (KSS 401) FRIEDRICH ENGELS (KSS 403)

KARL LIEBKNECHT (KSS 402) KARL MARX (KSS 404)

Displacement: Dimensions: Guns:

Oil fuel:

1,050 tons standard (1,350 tons full load) 278 $\frac{1}{6}$ (o.a.) \times 31 $\frac{1}{6}$ \times 9 feet 3—3.9 inch single; 4—37 mm. AA. paired vertically 3—21 inch

Tubes: A/S weapons: Machinery:

300 tons

General

Of the Soviet "Riga" type, Designed to carry 50 mines. Originally numbered 1-61, 1-62, 1-63, 1-64, then 40, 41, 42, 43. All now have lattice mast. A fifth ship of this type was burnt out at the end of 1959 and became a total wreck. A starboard quarter aerial view of Ernst Thälmann showing mimelaying stern, appears in the 1960-61 edition, and a starboard bow surface view in the 1961-62 and 1962-63 editions. Pennant No. 502 is also used (see photograph below).



KSS 502

1965, Werner Kähling



FRNST THAI MANN

1962

MINESWEEPERS

10 "Krake" Class

MRL 121 MLR 142

Displacement: 650 tons Dimensions: Guns:

229 ½ × 26½ x 12½ feet 1—3 · 4 inch, 10—25 mm. AA. paired 4 D.C.T.

A/S weapons: Mirres: Machinery:

Fitted for laying Diesels. 2 shafts. B.H.P.; 34,000=18 kts. 80 (peace). 96 (war)

Complement:

General

Built in 1956-58 at Peerewerft, Wolgast. The first four were completed in 1958, originally for Poland, but not delivered. Appearance is different compared with the first type, the squat wide funnel being close to the bridge work with a lattice mast and radar. Formerly numbered 6-17, 6-37, 6-41 to 6-47 and 6-91, but now assigned three digit numbers as above. A port broadside view of MLR 6-47 appears in the 1958-59 and 1959-60 editions, a starboard quarter aerial view of MLR 6-42, showing minesweeping stern, in the 1960-61 edition, and a port broadside view of 6-42 in the 1961-62 and 1962-63 editions.

These ten MLR and the following twelve are reported to have changed their tactical numbers: On 1 Mar. 1961 they were given the mames of the capitals of districts, etc., of Eastern Germany, Names reported: AUE, BERLIN, BRANDENBURG, COTTBUS, DRESDEN, ERFURT, FORST, FRANKFURT, ODER, GERA, GUBEN, HALLE, KARLMARXSTADT, LEIPZIG, MAGDEBURG, POTSDAM, ROSTOCK, SASSNITZ, SCHWERIN, SANFTENBERG, STRALSUND, SUHL and WEIMAR.



1966, col. Breyer

Minesweepers—continued

6 "Habicht II" Class

MLR 614 Displacement:

MLR 613

550 tons 213 (o.a.)×26½×11½ feet 1—3.4 inch, 8—25 mm, AA. paired 4 D.C.T. Fitted for laying 2 diesels. 2 shafts. B.H.P.: 2,800=18 kts. mm. AA. paired vertically

A/S weapons: Mirres

MLR 612

Machinery:

MLR 611

Guns:

General Ex-6-91, 6-92, 6-71-74, ex-6-111-116, ex-621 to 626. These vessels are a modification of the "Habicht I" class, but lengthened by 20 feet amidships. Built at Wolgast Peene Yard. All welded. All completed in 1955-56. A starboard broadside view of MLR 6-16 (ex-6-71, ex-116, ex-626) appears in the 1956-57 to 1959-60 editions, and a starboard quarter aerial view of MLR 6-11, showing minesweeping stern, in the 1960-61 to 1962-63 editions.



MLR 616

740

1963, Erich Gröner

6 "Habicht I" Class

760 780 R 21 R 22

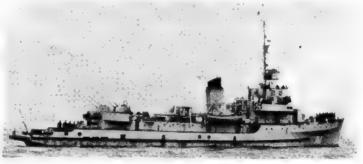
Displacement: 500 tons standard Dimensions:

500 tons standard 193½ (o.a.)×26½×11½ feet 1—3.4 inch, 8—25 mm. AA., 2—20 mm. AA. Guns 1—3·4 i 4 D.C.T. 18 A/S weapons: Mirres:

Diesels. 2 shafts. B.H.P.: 2,400=17 kts. Machinery:

Ex-MLR 6-31 to 6-36, ex-331-336, ex-031-036, formerly 611 to 616. Habloht means Hawk. Modified German M 40 type minesweepers but with diesel propulsion, Prefabricated in five sections and assembled at Volkswerft, Stralsund, Laid down in 1952-53, launched in 1952-54 and completed in 1952-54. All welded. MLR 6-33 sank early in 1958 but was salvaged and repaired in 1959 and serves as a rescue ship. A starboard bow view of MLR 6-31 (ex-331, ex-031, ex-611) appears in the 1956-57 to 1959-60 editions.

Four ships are employed as patrol escort ships as well as minesweepers, with numbers 720, 740, 760, 780, the other two having been converted to rescue ships in 1961 and numbered R 21 and R 22.



MLR 740

1963. Erich Gröner

TRAINING SHIPS

I Ex-Danish Type

ALBIN KÖBIS (ex-Ernst Thälmann, ex-Dorsch, ex-Hvidbjörnen)

Displacement: Dimensions:

1.050 tors 220 $(o.o.) \times 32\frac{1}{2} \times 16\frac{1}{2}$ (max.) feet 1—3.4 inch, 2—37 mm. AA., 4—25 mm Tiple expansion, 1 shaft. 1,800=14.5 kts. 2 water tube 140 tons Guns: -25 mm. AA. Machinery:

Boilers: Oil fuel:

Radius: 3,300 miles at 12 kts.

General General Ex-Danish fishery protection ship Hvidbjörnen. Launched in 1928 and completed in 1929. Rebuilt and modernised in 1953-54 as a corvette at Matthias Thesen Yard, Wismar, The name Dorsch was borne only during this period for disguise. Fitted with new boilers at Rostock in the spring of 1957. Employed as a training ship for officers candidates until 1963, when she was reported to be little more than a hulk. A photograph of Albin Köbis appears in the 1956-57 to 1963-64 editions.

WILHELM PIECK

Displacement: Machinery:

200 tons

Diesel. 1 shaft, B.H.P.: 106=8 kts.

General
Brigantine employed as a school ship. Built in 1951. Photo in 1955-56 edition.
Also yachts, Ernst Thälmann, 150 tons, Horst Ludwig, Jonny Scheer, 120 tons, and Ostseeland, 300 tons, and Max. Riechpletsch, Albin Köbis, Heigoland and Knechtsand, and Freundschaft and Patriot, ex-German R-boat type coastal minesweepers.

GUIDED MISSILE PATROL BOATS

2 U.S.S.R. "Osa" Class

Displacement:

160 tons standard (200 tons full load) 121 $\frac{1}{2}$ (pp.), 131 $\frac{1}{2}$ (o.a.)×28×5 (mean), 6 $\frac{1}{2}$ (max.)

feet
4 large hooded missile launchers in 2 pairs abreast
4—25 mm. (2 twin, 1 forward, 1 aft)
3 diesels. Speed=35 kts.

Machinery:

A development of the motor torpedo boat or motor gunboat type. Reported to have been launched in 1964.



PATROL VESSELS

14 U.S.S.R. "S.O.I" Type

ADLER

FALKE

KRANICH

215 tons standard (250 tons full load)
138 (pp.), 147\(\frac{7}{2}\) (o.a.)\(\times 20\times 10\) (max.) feet
4—25 mm. AA. (2 twin mounts)
4 ahead throwing launchers. 2 D.C.T.
3 diesels. B.H.P.: 3,500=28 kts.
30

A/S weapons:

Machinery: Complement:

Displacement: Dimensions: Guns:

General

Submarine chasers, Fitted with mine rails. Class includes Pennant Nos. 774, 811, 846, the two latest acquired in 1961 from the U.S.S.R.



No. 811

1964, courtesy Herr Werner Kähling

25 "Hai" Class

Displacement:

PC 3

PC 2 300 tons standard (370 tons full load) 174 (pp.), 187 (o.a.)×19×10 feet Diesels and gas turbines. Speed 25 kts.

Submarine chasers built at Peenewerft. Wolgast, The prototype completed construction in 1963. She has two large funnels abreast, Four reported to be in service by the end of 1964. The number reported to be operational in 1965 varied between six and 24. Names and pennant numbers are very uncertain.



HAI Type

1965, Reineche

FISHERY PROTECTION VESSELS

ROBERT KOCH

Displacement:

1.520 tons

217 $(o.a.) \times 32 \times 14\frac{1}{2}$ feet 2 diesels, 2 shafts, B.H.P.: 1,800=14·5 kts.

Trawler type. Launched in 1955 at the Neptun Yard, Rostock, and completed at the Matthias-Thesen Yard, Wismar, Crew 44. (A new fishery protection vessel is planned at Peenewerft, Wolgast. Two small vessels are Professor Hengi (ex-Neues Deutschland), and Dr. Friedrich Wolf (1957), both 100 tons, 14 kts.)

MOTOR TORPEDO BOATS

27 Ex-U.S.S.R. "P 6" Class

101	104	107	201	204	207	301	304	307
102	105	108	202	205	208	302	305	308
	106	109	203	206	209	303	306	309
103	100	107	203	AVO	207	303	300	307

Displacement: Dimensions: Guns:

75 tons 85½×20×6 (max.) feet 4—25 mm. (2 twin mountings) 2—21 inch

Tubes: Machinery: diesels. B.H.P.: 4,800=43 kts. (max.)

General Large interchangeable motor torpedo boats acquired in 1957-60 from the U.S.S.R. Wooden hull. Names include HANS BEIMLER, HANS COPPI and JOSEF ROEMER.



No. 306

REIHER

1965, Werner Kähling

· Gowen



P 6 Class

1960, Erich Gröner

5-67 (ex-827) 5-68 (ex-828) 5-69 (ex-829)

2 "Seeteufel" Class

5-95

5-65 (ex-825) 5-66 (ex-826)

Displacement: Guns: Tubes: Machinery:

5-92

150 tons 2—25 mm. AA. 2—21 inch Diesels. Speed=35 kts.

Torpedoschnellboote. Laid down in 1958. Built at Peenwerft, Wolgast.

12 "Forelle/Iltis" Class

5-94 5-93

Displacement: Dimensions: Guns: 55 tons $88\frac{1}{2}\times20\times5\frac{1}{2}$ feet 2—25 mm. AA., 4—15 mm. AA. 2—21 inch 2—21 inch 2 diesels. B.H.P.: 5,000=40 kts. Tubes:

Machinery:

PC 4

First launched in 1956 at Schiffswerft, Rosslau. Seven more were built at Peenewerft, Wolgast Four more are of recent construction.

9 Ex-U.S.S.R. "PA 3" Class

5-63 (ex-823) **5-64** (ex-824) 5-61 (ex-821) 5-62 (ex-822) Displacement:

50 tons 82×20×5½ feet 4—25 mm, AA. 2—21 inch

Tubes: Diesels. Speed=42 kts. Machinery:

General Built 1952-55. Purchased from U.S.S.R. 1957. Fitted out by Peenewerft. Wolgast.



No. 5-61

1965, Werner Kähling

TENDERS

Sixteen auxiliary vessels service the East German Navy, including the netlayer H 42 (1955), 475 tons, 10.5 kts.; and the tenders H 41 and H 43 (1957), 300 tons, 10 kts. For experimental purposes there are Rosa Luxemburg (1950) and Wilhelm Liebknecht (1951), 475 tons, 10 kts.; Meteor (1956), 435 tons, 10.5 kts.; and Saturn (1955), 110 tons 9 kts. Also Alfred Merz, buoy tender; and Karl F. Gauss, coastal survey ship, all of the same seiner type.

INSHORE MINESWEEPERS

37 "Schwalbe II" Class

100 tons standard 105 (o.a.)×18×3½ (max.) feet 2 diesels, B.H.P.; 380=12·5 kts. Displacement: Dimensions: Machinery:

General

Small minesweepers of medium speed built in 1955-57 at V.E.B. Yachtwerft, Berlin, Names reported: EISLEBEN, FREIBERG, GREIZ, GUSTROW, HAGENAU, ILMENAU, MEININGEN, POSSNECK, ZEITZ, ZWICKAU.



S 344

1964, Erich Gröner

MINESWEEPING BOATS

Class 50 "Schwalbe" 7-35 7-36 7-37 7-41 7-42 7-43 D 08 D 09 D 10 D 11 D 12 7.44 7-53 7-27 7-31 7-32 7-33 7-45 7-46 7-47 7-51 D 02 D 03 D 04 D 05 7-57 7-24 7-25 D 06 D 13 50 tons D 07 85½×14½×4¾ feet 2—25 mm, AA. Desels. 2 shafts. B.H.P.: 300=17 kts. Displacement: Dimensions: Guns: Machinery:

Launched in 1954-56. D 01 to D 14 are unarmed for survey purposes.



No. 7-31

1965, Werner Kähling

LANDING CRAFT

6 "Robbe" Class

600 tons standard (800 tons full load)
2—45 mm. AA. (1 twin); 4—25 mm. AA. (2 twin)
Speed=12 kts, Displacement: Machinery:

Amphibious vessels of a new type midway between the landing ship and landing craft categories. Reported to have been launched in 1963.



ROBBE

1965, Reinecke

12 "Labo" Class

No. 607

100 tons light, 150 tons standard (200 tons, full load) 131½×28×6 feet 4—25 mm. AA. (2 twin) Speed=10 to 12 kts. Displacement: Dimensions:

Landing craft of a new light type. Built by Peenewerft, Wolgast. Reported to have been launched in 1959-60 and 1961-63.

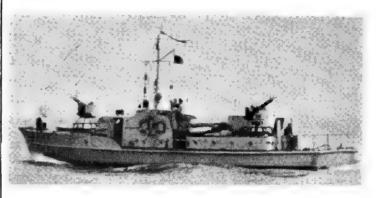
HARBOUR DEFENCE BOATS

45 "Delphin/Tummler" Class G 323 G 324 G 331 G 332 G 333 G 384 G 311 G 312 G 313 G 314 4-11 4-12 4-13 4-14 4-15 4-16 G 321

Displacement:

50 tons 2—25 mm. AA. or 4—15 mm. AA. Also carry 4 D.C. Jumo diesels. B,H.P.: 1,000=25 kts. Guns: Machinery:

Küsten-und Reede Schutzboote (Coastal and harbour defence boats) of all metal construction Reported only twelve remain effective.



KRS 4-46

Added 1963, Erich Gröner

COASTAL DEFENCE BOATS

48 "Sperber" Class

3-11	3-17	3-25	3-33	3-41	3-47	G 171	G 131
3-12	3-18	3-26	3-34	3-42	3-48	G 172	G 132
3-13	3-21	3-27	3-35	3-43	G 111	G 181	G 141
3-14	3-22	3-28	3-36	3-44	G 112	G 182	G 142
3-15	3-23	3-31	3-37	3-45	G 161	G 121	G 151
3-16	3-24	3-32	3-38	3-46	G 162	G 122	G 152

Displacement:

53 tons (73 tons full load), 3-31 to 3-38, 3-41 to 3-48, G 121-152, 56 tons (76 tons full load) 85\{ (o.a.) 3-31 to 3-38, 3-41 to 3-48, G 121-152, 96 \times 16\times 5 feet 3-15 mm. AA., 10 D.C. 3 Jumo diesels. B.H.P.: 1,800=25 kts. Dimensions:

All built in 1951-54. Küsten Schutzboote, G 111 to G 152 belonged to the Grenzbrigade Küste (frontier patrol). Some are no longer effective.

SURVEYING VESSELS

Training Boats There are also the coastal boats Partisan and Pioneer, launched in 1957, 79 tons 13 knots, rated as schulschiffe.

METEOR (1961)

Displacement^e 465 tons

130½ (o.a.)×24×10 feet Diesel. B.H.P.; 400=10.5 kts,

A new hydrographic vessel built by Volkswerft Stralsund, 330 tons gross.

IOHANN L. KRUGER (1951)

HELMUT JUST (1952)

Displacement: Dimensions:

475 tons 128×24×11 feet Diesel, B.H.P.: 400=10·5 kts. Machinery:

General
Built at VEB Rosslauer Shipyard. Rosslau. River Elbe. Launch dates above. 260 tons
gross. Also Jordan and Magnetologe (1954), 135 tons 10 kts., (German KFK type);
Arkona, Darsser Ort and Stubbenkammer (1956), 55 tons, 10 kts. (cutter type);
and Flaggtlef (ex-Stralsund) and Hydrograph (1953) 30 tons, 8 kts.
Hydrograph is also reported as an electronic intelligence collection trawler based
at Warnsmuende and employed in the Baltic.

OILERS

RIEMS

1,000 tons full load Displacement: Dimensions:

195 (o.a.) \times 29½ \times 12½ (max.) feet 2 diesels. B.H.P.: 2,800=14 kts.

Built at Peenewerft, Wolgast, In 1960-61 Crew 26. There is also H 44.

New Construction
Three new oilers were built by Mathias-Thesen -W., Wismar, 585 tons, 9 knots.

TUGS

H 36 (ex-926) H 35 (ex-925) H 37 (ex-927) WISMAR (ex-Lossen)

Displacement:

700 tons H.P.: 1.200=14 kts.

General

General

A photograph of H 36 (ex-926) appears in the 1956-57 to 1959-60 editions.

Also the small seagoing tugs H 12, H 32, H 34, 300 tons, 10 kts., built in 1957.

There are also the icebreaking tugs Elsbar and Elsvogel, built in 1958, 1,100 H.P.

A rescue tug is being built by Peenewerft, Wolgast, to a 1,500 tons, 14 kts., design.

GHANA

FRIGATE

I New Construction

Displacement: Dimensions: Gums

2,300 toms standard (2,520 tons full load)
320 (pp.), 330 (w.l.), 339\(\frac{1}{4}\) (o.a.)\(\times 40\)\(\times 12\) feet
2—4 inch (1 twin); 4—40 mm. Bofors (single)
2—2 inch rocket flare launchers: 2 portable saluting
1 Limbo three-barrelled depth charge mortar
8 diesels. 2 shafts, Controllable pitch propellers
230 tons

A/S weapons: Machinery: Oil fuel: Radius:

230 tons 4,800 miles at 15 kts. 200 to 210

Complement:

General
Frigate/Despatch Vessel specially designed by the British Ministry of Defence, (Royal Navy). Being built by Yarrow & Co. Ltd., Scotstoun, Glasgow, Her hull and machinery will basically conform to the "Leopard" Class, Type 41 standards but she will have revised scheme of layout and a different armament. The primary roles of the ship will be Escort, Patrol and Training and as a Despatch Vessel with special accommodation for official passengers. She will be fitted with Plessey Radar Naval Package and with stabilisers, The auxiliary machinery will comprise four diesel generators. Although broadly similar to the British anti-aircraft frigates she will have orthodox funnel, and will be flush-decked instead of broken-nosed. She will be equipped with a helicopter platform. General



NEW FRIGATE (Model)

1965, Ghana Navy, Official

KETA F 18

CORVETTES

2 "Kromantse" Class

KROMANTSE F 17

Displacement: Dimensions:

Guns: A/S weapons: Machinery:

440 tons light, 500 tons standard (590 tons full load) 160 (pp), 162 (w.l.), 177 (o.a.)×28½×13 (max.) feet 1—4 inch, 1—40 mm. AA, (set notes) 1 Squid triple-barrelled depth charge mortar 2 Bristol Siddeley Maybach diesels, 2 shafts. B.H.P.: 7,100=20 kts. 2,000 miles at 16 kts 54 (6+3 officers, 45 ratings)

Radius: Complement:

General
Anti-submarine vessels of a novel type designed by Vosper Ltd., Portsmouth, a joint venture with Vickers-Armstrongs, Ltd., one ship being built by each company. Comprehensively fitted with sonar, air and surface warning radar. Vosper roll damping fins, and air conditioning throughout excepting machinery spaces. The electrical power supply is 440 volts, 60 cycles a.c. The originally proposed twin 40 mm. mounting was suppressed to save top weight. A very interesting patrol vessel design, an example of what can be achieved on a comparatively small platform to produce an inexpensive and quickly built anti-submarine vessel. Kromantse was launched by by Vosper Ltd. at the Camber Shippard, Portsmouth, on 5 Sep. 1963, and commissioned on 27 July 1964. Keta was launched at Newcastle on 18 Jan. 1965, and commissioned on 4 May 1965.

Photographs of Kromantse appear in the 1964-65 and 1965-66 editions



KETA

1966, Wright & Logan

COASTAL MINESWEEPERS

I "Ton" Class

EJURA (ex-Aldington) M 16

Displacement: Dimensions: Guns: Machinery:

360 tons standard (425 tons full load)
140 (pp.), 153 (o.a.)×28½×8½ feet
1—40 mm. Bofors AA. forward, 2—20 mm. AA. aft
Deltic diesels, 2 shafts. B.H.P.: 3,000=15 kts. (max.) 45 tons 27

Oil fuel: Complement:

Former Royal Navy non-magnetic type vessel. Lent to Ghana by Britain in 1964.



EIURA

1964, Ghana Navy, Official

INSHORE MINESWEEPERS

AFADZATO (ex-Ottringham) M 12

YOGAGA (ex-Malham) M 11

120 tons standard (159 tons full load)
100 (pp.), 107½ (o.a.)×22×5½ feet
1—20 mm. Oerlii.on AA.
2 Paxman diesels. B.H.P.: 1,000=14 kts.
15 tons Displacement: Dimensions: Guns: Machinery: Oil fuel:

22 Complement:

Complement: 24
General
Malham, commissioned on 2 Oct. 1959, and Ottringham, commissioned on 30 Oct.
1959, sailed for Ghana on 31 Oct. 1959, and were officially transferred from the
Royal Navy to the Ghana Navy at Takoradi at the end of Nov. 1959 and renamed
after hills in Ghana. Now fitted with funnel.

A photograph of Afadzato appears in the 1964-65 and 1965-66 editions



YOGAGA

1966. Ghana Navy, Official

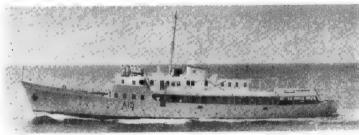
TRAINING SHIP

ACHIMOTA (ex-Kantamento, ex-Radiant) A 15

Displacement: Dimensions: Machinery: Oil fuel: Complement:

600 tons 174 (o.a.)×28×14 feet Diesels. 2 shafts. Speed=13 kts. (max.) 60 tons 35 (with additional accommodation for 30)

General
Built in 1927 by Camper & Nicholsons, Ltd., England, for the Commodore of the
Royal Yacht Squadron. Converted into an anti-submarine vessel during the Second
World War. After hostilities sold to the Abington Steamship Co. Ltd., for Mediterranean cruisers, Later re-engined and modernised. The Ghana Government then
purchased her for use as a State Yacht. In Feb. 1963 she was transferred to the
Ghana Navy and converted into Training Depot Ship. She also serves as Flagship.



ACHIMOTA

1964, Ghana Navy, Official

SEAWARD DEFENCE BOATS 2 "Ford" Class

ELMINA P 13 Displacement:
Dimensions:
Guns:
A/S weapons: Machinery:

KOMENDA P 14 KOMENDA P 14
120 tons standard (160 tons full load)
110 (pp.), 117½ (o.a.)×20½×5 feet
1—40 mm., 60 cal. Bofors AA.
Depth charge throwers
2 Davey Paxman diesels on outer shafts. B.H.P.: 1,000
=18 kts. 1 Foden diesel on centre shaft. B.H.P.: 100

Complement:

Built for Ghana by Yarrow & Co. Ltd., Scotstoun, Glasgow. Both laid down on 18 Oct. 1961. Komenda was launched on 17 May 1962 and commissioned on 1 Nov. 1962. Elmina was commissioned on 29 Nov. 1962. Fitted with roll damping fins. A photograph of Komenda appears in the 1963-64 to 1965-66 editions.



FLMINA

ASUANTSI

1966, Ghana Navy, Official

MAINTENANCE REPAIR CRAFT

ASUANTSI (ex-MRC 1122)

Acquired from Britain in 1965 and arrived in Ghama waters in July.



1966, Ghana Navy, Official

ROYAL HELLENIC NAVY

Administration

Chief of Naval Staff: Vice-Admiral Spyridon Avgeris, R.H.N.

Naval Attaché in London: Captain Spyridon Mourikis, R.H.N. Naval Attaché in Washington: Captain George C. Moralis, R.H.N.

Personnel

1966: 18,000 (1,800 officers and 16,200 ratings) (conscript, 18 months or enlistment)

Mercantile Marine

Lloyds Register of Shipping: 1,377 vessels of 7,137,244 tons gross

Silhouettes

Scale: 150 ft.=1 inch



NAVARINON, THYELLA



DOXA NIKI



AETOS, PANTHIR



ASPIS, LONCHI, SFENDONI, VELOS



IERAX, LEON



PIRPOLITIS

SUBMARINES

I Ex-U.S. "Balao" Class

1,526 tons standard, 1,816 tons surface (2,425 tons submerged) 311½ (0,a.)×27×17 feet 10—21 inch (6 bow, 4 stern). Diesels. β.H.P.: 6,500=20 kts. (surface). Electric motors. H.P.: 4,610=10 kts. (submerged) 300 tons Displacement: Dimensions: Tubes: Machinery:

300 tons 12,000 miles at 10 kts. 80 Oil fuel:

Radius: Complement:

TRIAINA (ex-U.S.S. Scabbardfish, SS 397)

Builders Portsmouth Navy Yard

Launched 27 Jan, 1944

Completed 29 Apr. 1944



TRIAINA

1966, A. & J. Pavia

2 Ex-U.S. "Gato" Class

Displacement:

Dimensions:

Machinery:

1,525 tons standard, 1,816 tons surface (2,425 tons submerged)
311½×27×17 feet
1—5 inch, 25 cal. d.p.
10—21 inch (6 bow, 4 stern)
G.M. 2-stroke diesels: B.H.P.:
6,500=21 kts. (surface). Electric motors. H.P.: 2,750=10 kts (submerged)
85

Complement:

Both loared from the United States in 1957 under the Military Aid Programme, Have two engine rooms instead of one to reduce the size of the compartments, Lapon was transferred on 8 Aug. 1957 and Jack on 21 Apr. 1958. A photograph of Amfitriti appears in the 1959-60 to 1964-65 editions.

A larger photograph of Poseidon appears in the 1964-65 and 1965-66 editions, and another photograph of Amfitriti appears in the 1959-60 to 1964-65 editions.

AMFITRITI (ex-Jack)

POSEIDON (ex-Labon) S 09 (ex-Y 16)

Pennant No.

S 78 (ex-Y 17)

Gen. Dynamics Corp.

S 09 (ex-Y 16)

Electric Boat Div.,
Gen. Dynamics Corp.

Electric Boat Div.,
Gen. Dynamics Corp.

Laid down 2 Feb. 1942 21 Feb. 1942

Completed 6 Jan. 1943 16 Oct. 1942 27 Oct. 1942 23 Jan. 1943



POSEIDON

Added 1966



AMFITRITI

Added 1966

DESTROVERS

ASPIS (ex-U.S.S. Conner, DD 582)
LONCHI (ex-U.S.S. Hall, DD 583)
NAVARINON (ex-U.S.S. Brown, DD 546)
SFENDONI (ex-U.S.S. Aulick, DD 569)
THYELLA (ex-U.S.S. Bradford, DD 545)
VELOS (ex-U.S.S. Charette, DD 581)

lo. Builders	Laid down	Launched	Completed
Boston Navy Yard Boston Navy Yard Bethlehem (S. Pedro) Consolidated Steel Corp., Texas Bethlehem (S. Pedro) Boston Navy Yard	16 Apr. 1942	18 July 1942	8 June 1943
	16 Apr. 1942	18 July 1942	6 July 1943
	27 June 1942	22 Feb. 1943	10 July 1943
	14 May 1941	2 Mar. 1942	27 Oct, 1942
	28 Apr. 1942	12 Dec. 1942	12 June 1943
	20 Feb. 1941	3 June 1942	18 May 1943

6 Ex-U.S. DD Type "Fletcher" Class

Displacement:

2,100 tons standard (3,050 tons

Pennant N D 06 D 56 D 63 D 85 D 63 D 85 D 28 D 16

Dimensions:

Guns:

2,100 tons standard (3,050 tons full load)
376½ (a.a.)×39½×12½ (mean).
18 (max.) feet
Aspls, Lonchi, Sfendoni, Velos:
4—5 inch, 38 cal. d.p.: 6—3
inch, 50 cal. AA. (three twin)
Navarinon, Thyella: 5—5 inch,
38 cal. d.p.: 10—40 mm. AA. (2
quadruple, 1 twin)
Aspls, Lonchi, Sfendoni, Velos:
5—21 inch (quintuple bark)
Navarinon, Thyella: Nene
Hedgehogs, side launching torpedo racks, depth charges
2 sets General Electric geared
turbines. 2 shafts, S.H.P.:
60,000=35 kts.
4 Babcock & Wilcox
650 tons

Tubes:

A/S weapons; Machinery:

Boilers:

Oil fuel: Radius:

650 tons 6,000 miles at 15 kts. 300

Complement:

General
Former U.S destroyers of the "Fletcher" class, transferred from the U.S.A. to Greece under the Mutual Defence Assistance Programme, Aspis, Lonchi and Velos at Long Beach, California, on 15 Sep. 1959, 9 Feb. 1960 and 15 June 1959, respectively, Sfendoni at Philadelphia on 21 Aug. 1959, and Navarinon and Thyella at Seattle, Washington, on 27 Sep. 1962. Aspis means Shield.

Photographs

Photographs
A photograph of Velos before refit appears in the 1959-60 edition, of Aspis before refit in the 1959-60 and 1960-61 editions, and of Sfendoni after refit in the 1960-61 to 1965-66 editions.

Disposal of Cruiser
The light cruiser EIII, formerly the Italian Eugenlo di
Savola, was relegated to reserve and officially deleted
from the list in 1964 (see full particulars photograph,
plan and elevation drawing, and silhouette sketch in the
1963-64 and earlier editions).



THYELLA (five 5-inch guns)

Royal Hellenic Navy, Official



ASPIS (four 5-inch guns)

1961, A. & J. Pavia

Combleted

5 Mar. 1941

Pennant No. DOXA (ex-U.S.S. Ludlow) NIKI (ex-U.S.S. Eberle) 65

2 Ex-U.S. DD Type "Gleaves" Class

Displacement:

1,630 tons standard (2,572 tons

Dimensions:

full load) $348\frac{1}{2}$ (o.a.)×36×18 (max.)

Guns:

348‡ (o.a.)×36×18 (max.) feet 4—5 inch, 38 cal., 12—40 mm. (2 quadruple, 2 twin), see Gunnery motes Removed

Torpedo tubes: A/S weapons:

Removed Hedgehogs, side launching torpedo racks, depth charges General Electric geared turbines. 2 shafts. S.H.P.: 50,000=34.5

Machinery:

Boilers:

kts. 4 Babcock & Wilcox 600 tons 5,000 miles at 15 kts. 250 (war), 188 peace

Radius: Complement:

General
Taken over from the United States Navy on 18 Apr.
1951. Formerly DD 438 and DD 430, respectively, of
the "Gleaves" class destroyers. As modernised, now
have tripod foremast. For former appearance see photograph of Niki in the 1956-57 to 1964-65 editions.

Nomenclature
Names mean "Glory" and "Victory", respectively.

Gunnery
The six 20 mm. AA. guns were removed in 1962.

Torpedo Tubes
The 5-21 inch torpedo tubes originally mounted in a quintuple bank were removed.

Photographs
A photograph of NIki with pole foremast appears in the 1956-57 to 1964-65 editions.

NATO No. D 220 D 225

Builders Bath Iron Works Corpn: Bath Iron Works Corpn:

Laid down 18 Dec. 1939

11 Nov. 1940

Launched

4 Dec. 1940 12 Apr. 1939 14 Sep. 1940



DOXA

DOXA

1965, Royal Hellenic Navy, Official



1964, Royal Hellenic Navy, Official

FRIGATES (Destroyer Escorts)

AETOS (ex-U.S.S. Slater, DE 766) IERAX (ex-U.S.S. Elbert, DE 768) LEON (ex-U.S.S. Eldridge, DE 173) PANTHIR (ex-U.S.S. Garfield Thomas, DE 193)	01 31 54 67	NATO No. D 212 D 213 D 217 D 227	Bullders Tampa S.B. Co. Tampa S.B. Co. Federal S.B. & DD. Co. Federal S.B. & DD. Co.	Laid down 9 Mar. 1943 1 Apr. 1943 22 Feb. 1943 23 Sep. 1943	Launched 13 Feb. 1944 23 May 1944 25 June 1943 12 Dec. 1943	Completed 1 May 1944 12 July 1944 27 Aug. 1943 24 Jan. 1944
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4 Ex-U.S. DE Type "Bostwick" Class

1,240 tons standard (1,900 tons full load)
306 (o.a.)×36×12 feet
3—3 inch, 50 ca1, d.p., 6—40
mm. (3 twin), 14—20 mm. AA. Displacement: Dimensions: Guns: twin)

Hedgehog, side launching torpedo racks; 8 D.C.T., 1 D.C. rack Diesel-electric, 2 shafts, B.H.P.: A/S weapons: Machinery: 6,000=20 kts. Oil fuel:

300 tons 11,500 miles at 11 kts. 220 (war) Radius:

Complement: General

Transferred from U.S.A. in 1951 under the Mutual Defense Assistance Programme. Their 3—21 inch torpedo tubes (triple mount) were removed. Meanings of names are Eagle, Falcon, Lion and Parther, respectively, Aetos and lerax were transferred on 15 Mar. 1951, Leon and Panthir on 15 Jan. 1951.

Photographs

A photograph of Leon and Panthir on 15 Jan. 1951.

A photograph of Leon appears in the 1962-63 to 1965-66 editions, and of Panthir in the 1965-66

Disposals of "Flower" Class
The two "Flower" frigates on loan from Great Britain, Apostolis and Tomlazis, were returned to the Royal Navy, and sold.

Disposals of "Hunt" Classes
Of the ex-British "Hunt" Type III frigates (escort destroyers). Adrias (ex-Border), was scrapped owing to heavy damage when a mine blew away her fo'c's'le on 22 Oct. 1943: Kanaris (ex-Hatherleigh) and Pindos (ex-Boberoke) were returned to Great Britain on 12 Dec. 1959 and sold for scrap in Greeces Miaoulis (ex-Modbury) was also returned and similarly disposed of in 1960: and Adrios (ex-Tanatside) and Astings (ex-Catterick) were removed from the effective list in 1963 and sold by the British Admiralty.

All three of the x-British "Hunt" Type II frigates (escort destroyers), Aegalon (ex-Lauderdale): Kriti (ex-Hursley) and Themistocles (ex-Bramham) were returned to Great Britain on 12 Dec.. 1959 and sold for scrap in Greece.

AETOS





1966, A, & J. Pavia

ESCORT MINESWEEPERS (Corvettes)

5 Ex-British "Algerine" Type Ocean Minesweepers (Officially classed as Corvettes)

1,030 tons standard (1,325 tons full load) 225 (o.a.) $\times 35\frac{1}{2} \times 11\frac{1}{2}$ (max.) Displacement: Dimensions: Guns:

A/S weapons:

Machinery: Boilers: 270 tons 5,000 miles at 10 kts. Oil fuel:

Radius: Complement:

General

General Formerly ocean minesweepers of the "Algeriffe" class in the Royal Navy. Acquired from the Executive Committee of Surplus Aflied Material. Formerly employed as corvettes, The armament of Mahitis was removed when she became a training ship. Armatolos, Mahitis and Navmachos were used for auxiliary purposes. All now used as personnel transports.

ARMATOLOS (ex-H.M.S. Arles)
MAHITIS (ex-H.M.S. Postillion)
NAVMACHOS (ex-H.M.S. Lightfoot)
PIRPOLITIS (ex-H.M.S. Arcturus)
POLEMISTIS (éx-H.M.S. Gozo)

Pennant No. M 12 M 58 M 64 M 76 M 74

Builders Launched 19 Sep. 1942 14 Nov. 1942 31 Aug. 1942 27 Jan. 1943 Toronto Shipyard Redfern Construction Co. Redfern Construction Co. Redfern Construction Co. Redfern Construction Co.



1962, Captain Aldo Fraccaroli

COASTAL PATROL VESSELS

6 BYMS Type Ex-Coastal Minesweepers

ANDROMEDA (ex-BYMS 2261) CLIO (ex-BYMS 2152) LAMBADIAS (ex-BYMS 2182)

PIGASSOS (ex-BYMS 2221) PROKYON (ex-BYMS 2076 THALIA (ex-BYMS 2252)

251 tons standard (338 tons full load)
136×24½×8½ (max.) feet
1—20 mm. Oerlikon AA.
2 G.M. diesels. 2 shafts. B.H.P.: 1,000=15 kts. Displacement: Dimensions:

Guns: Machinery: Oil fuel:

Radius:

16 tons 5,500 miles at economical speed Complement:

General

Former United States coastal minesweepers of the BYMS type acquired in 1959. Of wooden hull construction. Recent Disposals

Recent Disposals

Sister ship Aura (ex-BYMS 2054) was officially deleted from the list in 1962.

The eight seaward defence boats of the HDML type. Bizani (ex-HDML 1221),
Davila (ex-HDML 1032), Distration (ex-HDML 1242), Farsala (ex-HDML 1252),
Karia (ex-HDML 1307), Kastraki ex-HDML 1375), Kilssowra (ex-HDML 1149)
and Portaria (ex-HDML 1051), all loan from Great Britain, were deleted from the list in 1962.



ANDROMEDA

1962, Royal Hellenic Navy, Official

Displacement: Dimensions: Guns: A/S weapons: Machinery: Oil fuel:

335 tons standard (439 tons full load)
170 (w.l.), 174\(\frac{1}{2}\) (o.a.)\(\times 23\times 7\), 10\(\frac{1}{2}\) (max.) feet
1—3 inch, 6—20 mm. AA. (see Gunnery notes)
Hedgehog. side launching torpedo racks, depth charges
2 G.M. 2 str. diesels, 2 shafts, B.H.P.: 3,600=19 kts.
60 tons

General All launched in 1943-44 Presented from the U.S. Navy in Aug. 1947. The two 40 mm. AA, guns were removed and a hedgehog was installed in 1963.

40 mm. AA., guns were common and the property of the possible of the property of the property



ANTIPLOIARKHOS PEZOPOULOS

1964, R.H.N. Official

Launched Pennant No. PLOTARKHIS MARIDAKIS (ex-U.S.S. LSSL 65) PLOTARKHIS VLACHAYAS (ex-U.S.S. LSSL 35) 14 Nov. 1944 17 Sep. 1944 P 94 P 95

Displacement: Dimensions: Guns:

257 tons standard (395 tons full load)
157×23½×5¾ feet
1—3 inch, 4—40 mm. AA. (2 twins), 4—20 mm. AA.,
6—0.5 inch AA. M.G.
Diesel. 2 shafts, B.H.P.: 1,600=14.4 kts.

Machinery:

Oil fuel:

General

General
Former U.S. Landing Ships Support, Large. Built by Albina Engine & Machinery
Works Inc., Portland, Oreg., and Commercial Iron Works, Portland, Oreg., respectively, Plotakkhis Vlachavas was transferred from the U.S.A. on 12 Aug. 1957
under the Military Aid Programme and Plotarkhis Maridakis in June 1958. A
photograph of Plotarkhis Maridakis appears in the 1959-60 to 1962-63 editions.



PLOTARKHIS VLACHAVAS

1963, Royal Hellenic Navy, Official

DOCK LANDING SHIP

NAFKRATOUSSA (ex-Hyperion, ex-LSD 9)

Displacement: Dimensions: Guns: Machinery:

4.790 tons standard (9.375 tons full load)
454 (w.l.), 457\(\frac{1}{2}\) (o.a.)\times 72\(\frac{1}{2}\)\times 18 (max.) feet
1—3 inch, 8—40 mm, AA,
Geared turbines, 2 shafts, S.H.P.: 7,000=15 kts,

Launched by Newport News Shipbuilding & Dry Dock Co. on 21 May 1943 Taken over by Royal Hellenic Navy in 1953. Headquarters ship of Captain Landing Forces.



NAFKRATOUSSA

1963, Royal Hellenic Navy, Official

FAST PATROL BOATS

6 "Nasty" Type

Ordered from Boat Services Limited, Mandal, Norway, in Mar. 1966 for delivery within a year. The first vessel is scheduled to be completed by Autumn. The contract amounts to £2,000,000.

MINELAYERS

AKTION (ex-LSM 301) N 04

Complement:

AMVRAKIA (ex-LSM 303) N 05

720 tons standard (1,100 tons full load)
196\(\frac{1}{2}\) (w.l.), 203\(\frac{1}{2}\) (o.a.)\(\times 24\)\(\frac{1}{2}\)\(\times 7\)\(\frac{1}{2}\) (max.) 8\(\frac{1}{2}\) feet
8—40 mm. d.p. (4 twin), 6—20 mm. A.A. (single)
Capacity 100 to 130
2 diesels. 2 shafts, B.H.P.: 3,600=12.5 kts.
3,000 miles at 12 kts. Displacement: Dimensions: Guns: Mines: Machinery: Radius

General
Former U.S. Landing Ships Medium. Both built at Charleston Naval Shipyard
Aktion was launched on 1 Jan. 1945 and Amvrakia on 14 Nov. 1944. Converted in
the U.S.A. into all purpose seagoing minelayers for the Royal Hellenic Navy under
the Mutual Defense Assistance Programme, Underwent extensive rebuilding from
the deck up. Twin rudders. The Greek flag was hoisted on 1 Dec, 1953.

A photograph of Amvrakia appears in the 1959-60 to 1964-65 editions.



AKTION

1965, Royal Hellenic Navy, Official

COASTAL **MINESWEEPERS**

ALDON (ex-MSC 310) M 248 AIGL! (ex-MSC 299) M 246 DAPHNI (ex-MSC 307) M 247

DORIS (ex-MSC 298) M 245 KICHLI (ex-MSC 308) M 241 KISSA (ex-MSC 309) M 242

320 tons light (370 tons full load)
138 (pp.), 144 (o.a.)×28×8½ feet
2—20 mm. AA.
2 General Motors diesels. 2 shafts. B.H.P.: 880=13 kts.
25 tons
2,500 miles at 10 kts.
39 Displacement: Dimensions: Guns:

Machinery: Oil fuel: Radius:

Complement:

General

General

Built in the U.S.A. under the Military Aid Programme for Greece. Completed and transferred in 1964-65, Largely of wooden construction, being built throughout of materials with the lowest possible magnetic attraction to obtain the greatest possible safety factor when sweeping for magnetic mines.



AIDON

1966, Royal Hellenic Navy, Official

8 BYMS Type

M 209 LEROS (ex-BYMS 2186)
M 201 PARALOS (ex-BYMS 2066)
M 203 PAXI (ex-BYMS 2056)
M 208 ZAKYNTHOS (ex-BYMS 2209) AFROESSA (ex-BYMS 2185) KALYMNOS (ex-BYMS 2033) KARTERIA (ex-BYMS 2065) KERKYRA (ex-BYMS 2172) M 210 M 204 M 202

270 tons standard (350 tons full load) $136\times24\frac{1}{2}\times8$ feet 1—3 inch, 2—20 mm. AA., 4 M.G., 2 D.C.T. Diesel, B.H.P.: 1,000=12 kts. Displacement: Dimensions: Guns:

Machinery: Complement:

33

General

Of wooden construction. All the names are conventional and are not mentioned in signals or correspondence. Known by numbers, Karterla was laurched on 21 Dec. 1942. Ithaki (ex-BYMS 2240). Kefallinia (ex-BYMS 2171), Lefkas (ex-BYMS 2086), Patmos (ex-BYMS 2229), Salaminia (ex-BYMS 2067), and Simi (ex-BYMS 2190) were officially deleted from the list in 1966.

A photograph of Paralos appears in the 1955-56 to 1962-63 editions, and of Leros in the 1963-64 to 1965-66 editions.

SURVEY SHIPS

ARIADNE (ex-BYMS 2058)

VEGAS (ex-BYMS 2078)

252 tons standard (325 tons full load) $136\times24\frac{1}{2}\times6$ feet Diesel. B.H.P.: 1,000=12 kts. Displacement; Dimensions: Machinery:

Former coastal minesweepers of the wooden hulfed BYMS type, see sister ships above. The survey ship Alkyoni was discarded in 1961.

TANK LANDING SHIPS

3 British LST (3) Type

ACHELOOS

ALIAKMON L 104 (ex-LST 3002)

PINIOS L 171 (ex-LST 3506)

Displacement: Dimensions: Guns:

2,256 tons standard (4,980 tons full load)
330 (w.l.), 347 (o.a.)×55×14½ (max.) feet
10—20 mm, AA,
Triple expansion. 2 shafts, I.H.P.: 5,500=13 kts.

Machinery:

Oil fuel:

General
Original LST (3) type landing ships, Launched in 1943. On loan from Great
Britain, Alfios (ex-LST 3020), Axios (ex-LST 3007) and Strymon (ex-LST 3502)
were returned to the Royal Navy, refitted at Malta and taken over by the Ministry
of Transport. Acheloos (ex-LST 3503) was being replaced in 1964 by an LST of the



PINIOS

1966, A. & J. Pavia

4 Ex-U.S. LST Type

IKARIA L 154 (ex-U.S.S. Potter County, LST 1086)
LESBOS L 172 (ex-U.S.S. Boone County, LST 389)
RODOS L 157 (ex-U.S.S. Bowman County, LST 391)
SYROS L 144 (ex-U.S.S. LST 325)

Displacement: Dimensions: Guns: Machinery: Cargo Capacity: Complement: 1,653 tons standard (4,080 tons full load)
316 (w.l.), 328 (o.a.)×50×14 (max.) feet
8—40 mm. AA., 6—20 mm. AA. (Rodos: 10—40
G.M. diesels, 2 shafts, B.H.P.: 1,700=11·6 kts,
2,100 tons
119 (accommodation for 266) -40 mm.)

General Former United States tank landing ships, Ikaria, Lesbos and Rodos were transferred to the Royal Hellenic Navy on 9 Aug. 1960. Syros was transferred on 29 May 1964 at Portsmouth, Virginia, under MAP.



LESBOS

1966, A. & J. Pavia

3 U.S. LST (2) Type

CHIOS L 195 (ex-LST 35) LIMNOS L 158 (ex-LST 36) SAMOS L 179 (ex-LST 33)

Displacement: Dimensions: Guns:

1.625 tons standard (4,080 tons full load)
316 (w.l.), 328 (o.a.)×50×14 (max.) feet
1—3 inch, 6—20 mm. AA.
Diesel. 2 shafts, B.H.P.: 1,700=11 kts.

Machinery: Oil fuel:

595 tons Complement:

All launched in 1943. Acquired from the U.S. Navy in 1943, on Lend-lease terms. Lesvos (ex-LST 322) was returned to the British Government in 1953. A photograph of Chios appears in the 1952-53 to 1960-61 editions.

MEDIUM LANDING SHIPS

6 Ex-U.S. LSM Type

IPOPLIARKHOS CRYSTALIDIS L 165 (ex-U.S.S. LSM 541)
IPOPLIARKHOS DANIOLOS L 163 (ex-U.S.S. LSM 227)
IPOPLIARKHOS GRIGOROPOLOUS L 161 (ex-U.S.S. LSM 45)
IPOPLIARKHOS MERLIN L 166 (ex-U.S.S. LSM 577)
IPOPLIARKHOS TOURNAS L 162 (ex-U.S.S. LSM 399)
IPOPLIARKHOS TOURNAS L 162 (ex-U.S.S. LSM 102)

Displacement: Dimensions:

743 tons (beaching), (1,095 tons full load)
196\(\frac{1}{2}\) (w.l.), 203\(\frac{1}{2}\) (o.a.)\(\times 34\(\frac{1}{4}\times 8\(\frac{1}{2}\)
2—40 mm, AA., 8—20 mm. AA.
Diesel direct drive, 2 shafts. B.H.P.: 3,600=13 kts.

Former United States Medium Landing Ships of the LSM type, LSM 541 and LSM 557 were handed over to the Royal Hellenic Navy at Salamis on 30 Oct. 1958, LSM 45, LSM 102, LSM 227 and LSM 399 were transferred to Greece at Portsmouth, Virginia on 3 Nov. 1958. All were renamed after naval heroes killed during the Second World War.



IPOPLIARKHOS CRYSTALIDIS

Royal Hellenic Navy, Official

MINESWEEPER DEPOT

HERMES (ex-Product, ex-Port Jackson)

Displacement:

550 tons standard (650 tons full load) $133\times27\frac{1}{2}\times11$ feet Diesel, 4-stroke. B.H.P.: 560=11 kts.

Dimensions: Machinery:

Former British trawler, Launched in 1941, On loan from Great Britain. Pennant No. A 324.



HERMES

1963, A. & J. Pavia

REPAIR SHIP

SAKIPIS (ex-K.N.M. Ellida, ex-U.S.S. ARB 13, ex-U.S.S. LST 50)

Displacement:

Guns: Machimery: Complement: 3,800 tons standard (5,000 tons full load)
316 (w.l.), 328 (o.a.)×50×14 approx. (max.) feet
12—40 mm, AA., 12—20 mm. AA.
G.M. diesels, 2 shafts. B.H.P.: 1,800=10 kts. sea speed

General
Former United States tank landing ship. Built by Dravo Corporation, Pittsburgh. Laid down on 29 Aug. 1543, launched on 16 Oct. 1943, completed on 27 Nov. 1943, and first commissioned in 1943. Converted to a battle damage repair ship of the ARB 1 class in 1952 by Puget Sound Bridge & Dredger Co. Taken over by the Royal Norwegian Navy at Seattle on 14 Nov. 1952 under the Mutual Defense Assistance Program to serve as a battle damage repair ship for Norwegian naval surface vessels and craft. Returned to the U.S. Navy on 1 July 1960. Acquired by Greece from the U.S.A. on 16 Sep. 1960 having been transferred to the Royal Hellenic Navy at Bergen, Norway, on that date. Pennant No. A 329. Recent Disposal
The old repair ship Hephalstos (ex-Khlos, ex-Marle Rebbel) was removed from the

The old repair ship Hephalstos (ex-Khlos, ex-Marle Reppel) was removed from the effective list and will be sold, it was officially stated in 1963.



SAKIPIS

1962, Royal Hellenic Navy, Official

LANDING CRAFT

8 Ex-U.S. LCU Type

LCU 763 LCU 766

LCU 827 LCU 852

Displacement: Dimensions: Guns: Machinery:

Complement:

143 tons standard (309 tons full load) 105 (w.l.), 119 (o.a) \times 32 $\frac{2}{3}\times$ 5 (max.) feet 2—20 mm. Oerlikon AA. Diesel. 3 shafts. B.H.P.: 440=8 kts. 125

General
Former United States Utility Landing Craft of the LCU (ex-LST (6)) type.
Sciathos and Scopelos were acquired in 1959. Kea, Kitnos and Sifnos were transferred
from the United States in 1961, and three more in 1962. It is officially stated that
these LCUs are referred to by their hull numbers and not by names.
Minor Landing Craft
There are also 13 LCMs and 34 LCVPs, all transferred from the United States
under the Military Aid Program.

All eight tank landing craft of the LCT type were sold in 1963.

The nine Assault Landing Craft. LCA 1123, 1352, 1525, 1618, 1725, 1726, 1775, 1818 and 1886 on loan from Great Britain from 1950 to 1959, were returned or otherwise disposed of.

AIR-SEA RESCUE BOATS

ADAMIDIS A/N 705 (ex-AVR 705) IOS A/N 1084 (ex-AVR 1084)

IRA A/N 709 (ex-AVR 709) KARNAVIAS A/N 707 (ex-AVR 707) SAKELLARIOU A/N 708 (ex-AVR 708)

Dimensions: Machinery:

24 tons $63\times15\times3\frac{1}{2}~feet$ 2 Hall Scott motors. B.H.P.: 1,260=33 kts.

General

General

These boats may be discarded in the near future it is officially stated.

Recent Disposals of Motor Lounches

Of the eight Fairmile "B" type motor launches, Doxaton (ex-ML 307), Drama (ex-ML 341), Elephtheron (ex-Kalini, ex-ML 478), Chalkis (ex-ML 578), Keperlissi (ex-ML 867) and Tsatalza (ex-ML 861) were returned to Great Britain in 1960 and scrapped or sold, and Kalambaka (ex-ML 483) and Nissiros (ex-ML 864) were placed in reserve and officially deleted from the list in 1964.

BOOM DEFENCE VESSEL

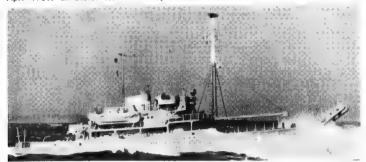
THETES

680 toms standard (805 tons full load)
146 (w.l.), 169½ (o.a.)×33½×11¾ (max.) feet
1—40 mm. AA., 4—20 mm. AA.
M.A.N. diesel motors, 1 shaft, B.H.P.: 1,400=12 kts. Displacement: Dimensions: Guns:

Machinery:

Complement:

General
Netlayer of the U.S. type. Built by Kröger, Rendsburg, as a U.S. offshore order. Launched in 1959, Taken over by the Royal Hellenic Navy Transferred on 9 Apr. 1960. Ex-U.S.S. No. AN 103, Pennant No. A 307.



THETIS

Royal Hellenic Navy, Official

OCEAN SALVAGE VESSEL

SOTIR (ex-Salventure)

Displacement: 1,440 tons standard (1,700 tons full load)

Measurement-

Dimensions:

1,112 tons gross 216 $(o.a.) \times 37\frac{1}{4} \times 13$ (max.) feet Triple expansion. 2 shafts. I,H.P.: 1,500=12 kts. Machimery:

Oil fuel: 310 tons Complement:

General

eneral Former British Royal Fleet Auxiliary ocean salvage vessel of the "Salv" class. n loan from Great Britain. Equipped with a decompression chamber. Pennant No



SOTIR

A. & J. Pavla

LIGHTHOUSE TENDERS

ST LYKOUDIS (ex-Chania)

1,020 tons standard (1,280 tons full load) 190 (pp.), 205 (o.a.) \times 33 \times 14 $\frac{1}{2}$ feet Triple expansion. I.H.P.: 2,750=14 kts. Displacement: Dimensions: Machinery:

2 S.E. 230 tons Oil fuel:

Former corvette of the British "Flower" type. Launched in 1960. Pennant No: A 481.

SKYROS

SERRAI (ex-Anna Raeder)

Displacement:

350 tons 725 tons A 487 Displacement: Pennant No.: A 485 Pennant No.:



ST. LYKOUDIS

1962, Captain Aldo Fraccaroli

WATER CARRIERS

ILIKI Capacity:	120 tons	KASTORIA Capacity:	520	tons
VOLVI Capacity:	350 tons	TRIHONIS Capacity:	300	tons
KALIROE		STYMPHALIA		

Capacity: 120 tons

The transports Anchialos (ex-FT 28, ex-APC 65), Distoman (ex-FT 15, ex-APC 66) and Elasson (ex-FT 12, ex-APC 67) were removed from the effective list in 1963 and put up for sale; and Kalavrita (ex-FT 13, ex-APC 71), Lehoven (ex-FT 24, ex-APC 73) and Velestinon (ex-FT 11, ex-APC 75) were officially deleted from the list in 1964.

OILERS

ARETHOUSA (ex-U.S.S. Natchaug. AOG 54)

1.850 tons light (4.335 tons full load)
2.575 deadweight (cargo capacity 2.040 tons)
292 (w.l.), 310\(\frac{1}{2}\) (o.a.)\(\times 48\)\(\frac{1}{2}\)\(\frac{1}{2}\) (max.) feet
4-3 inch d.p., 50 cal.
General Motors diesels.2 shafts. B.H.P.; 3,300=14 kts.
43 (6 officers, 37 men) Displacement: Measurement: Dimensions: Guns

Machinery: Complement:

General Former United States petrol carrier of the AOG type. Built by Cargill Inc., Savage. Minn. Laid down on 15 Aug. 1944. Launched on 6 Dec. 1944. Transferred from the U.S.A. to Greece under the Mutual Defense Assistance Program at Pearl Harbour, Hawaii in July 1959, Pennant No. A 377,

Disposal

The old oiler Argo (ex-Solna, ex-Graniund, ex-Corbis, ex-War Ranee), originally of the British "War" class, was officially deleted from the list in 1962.



ARETHOUSA

1960, Royal Hellenic Navy, Official

PERSEUS (ex-ST 772) ROMALEOS TITAN

SAMSON (ex-F 16)

7FUS (ex-YOG 98)

900 tons 165×35×10 feet Capacity:

Dimensions:

Former U.S. yard petrol carrier, Launched in 1944, Pennant No. A 372,

SIRIOS (ex-Poseidon, ex-Empire Faun) General Capacity: 850 tons

Formerly on loan from Great Britain, but purchased outright in 1962. This ship was renamed Sirios when the name Poseldon was given to the submarine Lapon acquired from the U.S.A. in 1958 (see earlier page). Pennant No. A 345. VIVIIS

Capacity: 687 tons

Originally a water carrier but now employed as an oiler. Pennant No. A 471.

PROMETHEUS

Capacity: 520 tons General

Small yard oil tanker. Launched in 1959. Pennant No. A 374.

KRONOS (ex-Islay, ex-Dresden)

Displacement: Capacity: 311 tons 110 tons General

Pennant No. A 373, Khalki and Xanthi were officially stricken from the list in 1958.

ORION (ex-U.S, tanker Y 126) Capacity: General 700 tons

Formerly small United States yard tanker. Pennant No. A 376.

FLEET TUGS

ACCHILEUS (ex-Confident)
AEGEVS
AIAS CYCLOPS (ex-F 10) CIGAS KENTRAVROS MINOTAVROS ANTAIOS (ex-Busy)

ATLAS (ex-F 5)
Disposals (ex-Theseus, ex-ST 539)

Heraklis was officially deleted from the list in 1966

GABOON PATROL BOAT

BOUET-WILLAUMEZ (ex-VP 775, ex-VP 25, ex-HDML 1021)

40 tons standard (52 tons full load)
72 (0.a.)×15½×6 feet
2—20 mm. AA., 2 M.G.
2 diesels. 2 shafts. B.H.P.: 300=12 kts. Displacement: Dimensions: Gune Machinery:

General

Former French vedette de port, ex-British harbour defence motor launch, transsigned the first Franco-Gabonese Treaty.



BOUET-WILLAUMEZ

1964, Gabonese Armed Forces, Official

GUINEA

A small naval force of coastal and river craft is being established.

GUATEMALA

PATROL VESSEL

JOSE FRANCISCO BARRUNDIA (ex-Snapphanen)

Displacement:

Dimensions:

310 tons standard (370 tons full load)
170\(\frac{1}{2}\times 19\(\frac{1}{2}\times 9\(\frac{1}{2}\times 6\text{tons}\) feet
2—3 inch; 2—25 mm, AA.
DeLaval geared turbines, 2 shafts. S.H.P.: 3,600=23 kts.
2 Vancon-Normand Guns: Machinery:

Boilers:

Oil fuel: 50 tons Complement: 40

General
Built by Karlskrona Dockyard. Launched on 2 Nov. 1933. Former minesweeper In
the Royal Swedish Navy until 1959 when she was transferred to the new Guatemalan
Navy as the first warship. Now has lower mast (lattice), bridge and funnel (squat,
thicker and streamlined) and shields on her 12-pounder guns. One of the 25 mm.
Bofors was moved aft. She is painted a very light grey, nearly white. In 1964 she
was reported to be inoperative.
Establishment

Establishment
On 5th Jan. 1959 Guatemala announced the establishment of a navy, with the primary duty of routing poaching fishing boats and smugglers. In addition to the patrol vessel above there are four small patrol craft (ex-U.S, 40 ft, coastguard cutters). A 63 ft. aircraft rescue boat (AVR) was transferred from the U.S. to Guatemala on 8 Oct. 1964. Personnel: 85 officers and men.



JOSÉ FRANCISCO BARRUNDIA

1959, Official

HAITI

COAST GUARD PATROL VESSELS

DESSALINES (ex-U.S.N. Tonawanda, AN 89)

Displacement:

650 tons standard (785 tons full load) $168\frac{1}{2}{\times}33{\times}10\frac{3}{4}$ feet

Machinery:

Busch-Sulzer diesel-electric, S.H.P.: 1,500=12 kts.

General

Establishment

Former United States Navy netlayer of the "Cohoes" class. Built by Leatham D. Smith S.B., Co. Launched on 14 Nov. 1944. Loaned to Haiti in 1960 for five years. Pennant No., GC 10.

LA CRETE A PIERROT (ex-U.S.C.G. 95315)

VERTIERES

Displacement; Dimensions: Guns:

Machinery:

100 tons 95×19×5 feet 1—40 mm. AA. 4 diesels. 2 shafts, B.H.P.: 2.200=21 kts. 1,500 miles

Complement: General

General
Former United States Coast Guard cutters, steel type. Built at U.S. Coast Guard
Yard, Curtiss Bay, Maryland. La Crete a Pierrot was acquired on 26 Feb. 1956.
Vertieres was transferred to Haiti at Norfolk, Virginia, in Oct. 1956 and commissioned in Dec. 1956. Pennant Nos. GC 8 and GC 9, respectively.

AMIRAL KILLICK (ex-U.S.C.G. Black Rock, WAGL 367)

Displacement:

160 tons

Dimensions: General

Length 114 feet

Former small buoy tender purchased from the United States Coast Guard in 1955, commissioned in Jan. 1956, Pennant No. GC 7. A photograph appears in the 1957-58 to 1963-64 editions.

16 AOUT 1946 (ex-SC 453)

Displacement:

110 tons standard (138 tons full load) 110 $\frac{1}{2}\times 8\frac{1}{2}\times 6\frac{1}{2}$ feet 2—40 mm., 2—20 mm. Diesels, 2 shafts B.H.P.: 1,000=15 kts.

Dimensions: Guns:

Machinery:

Pennant No. GC 2. Submarine chaser of the SC type acquired during 1947 from the U.S. Navy. Launched in 1943. Laid up in reserve in poor condition and will probably be sold or scrapped. Amiral Killick, GC 4, was discarded in 1954, Toussaint L'Ouverture (ex-SC 1064) was sold in 1959.

The coastguard patrol boats Nos. 1, 2, 3, 4, 5 and 6, originally of the U.S.C.G. 83 ft. type, have been stricken from the list.

SAVANNAH

Displacement:

47 tons 83×16×41 Dimensions:

feet Diesels, 2 shafts. B.H.P.: 200=9 kts. Machinery:

Complement:

Ex-U.S.C.G. cutter 56200, built in the U.S.A. in 1944 and acquired in 1944.

Pennant No GC 1. ARTIBONITE (ex-U.S. LCT)

Displacement: Dimensions:

134 tons standard (285 tons full load)
120¼ (o.a.)×32×4¼ feet
3 diesels, B.H.P.: 675=8 kts.

Machinery:

Complement:

General

Former United States tank landing craft. Salvaged by Haitian Coast Guard after grounding and converted. Pennant No. GC5. Laid up in reserve having been damaged by grounding in Mar. 1956. Vertieres GC 6 (ex-U.S.S. APC 92) was lost at sea.

SANS SOUCI (ex-Captain James Taylor)

Displacement: Machinery:

161 tons Diesels: 2 shafts. B.H.P.: 300=10 kts.

General Employed, when required, as the Presidential Yacht.

HONG KONG

INSHORE MINESWEEPERS

2 "Ham" Class

CARDINHAM M 2615

ETCHINGHAM M 2625

Displacement: Dimensions: Guns:

120 tons standard (159 tons full load)
100 (pp.), 106½ (o.a.)×21½×5½ feet
1—40 mm. Bofors AA.
2 Davey Paxman diesels. B.H.P.: 1,000=14 kts. (10

Machinery:

kts sweeping)

15 tons

Oil fuel: Complement:

15

General

Transferred from the Royal Navy to the Hong Kong Royal Naval Reserve in 1959. For specialised notes and group particulars see under the "Ham" class in the United Kingdom section.

Depôt Ship Hong Kong R.N.R.

The vessel which actually bears the name of the depôt ship of the Hong Kong Royal Naval Reserve, H.M.S. CORNFLOWER, is MFV 197.



ETCHINGHAM

1961, Hong Kong R.N.R., Official

HONDURAS

Coast Guard

A frigate was adapted for mercantile use. There are three small coastguard cutters,

Mercantile Marine

Lloyd's Register of Shipping: 47 vessels of 81,008 tons gross

HUNGARY

RIVER PATROL VESSELS

BAYA (ex-Barsch)

Displacement: Dimensions: Guns:

140 tons

 $149\frac{1}{4} \times 19\frac{1}{2} \times 3\frac{1}{4}$ 2—70 mm., 2 M.G. A.E.G. turbines. 2 shafts. S.H.P.: 1,200=15 kts.

Machinery: Boilers Yarrow

Oil fuel: Complement: 18 tons

Built at the Ganz-Danubius Yard Budapest, and launched in 1918. Her screws work in tunnels Patrol Launches

Ten patrel launches of 100 tons displacement were reported to be in service.

DEPOT SHIP

CSOBANC

Displacement: Dimensions:

Machinery:

305 tors $132\times18\times4\frac{1}{2}$ feet 2 Diesels. Tunnel screws, B.H.P.: 180=8 kts.

MINESWEEPERS

Oil fuel Complement:

RIVER

Built at the Ganx-Danubius Yard, Budapest, and launched in 1928. Employed as a transport, maintenance vessel and supply ship.

TRAINING SHIP

BADASCONY

Displacement: Machinery:

225 tons H.P.: 400=10-5 kts.

Displacement:

tons

2 M.G. (Can also carry 8 mines) 2 diesels. B.H.P.: 75

General
Ten river minesweepers armoured with 8 mm, plating (photograph in the 1957-58 to 1960-61 editions) have been reported. They can sweep or lay mines.

Minesweeping Launches
Two small minesweepers of 70 tons displacement were reported to be in service.

ICELAND

Administration

Minister of Justice: Mr. Johann Hafstein. Director, Coast Guard Service: Captain Petur Sigurdsson.

The Coast Guard Service (Landhelgisgaezlan) deals with fishery protection, salvage, hydrographic research and surveying.

Coast Guard Patrol Vessels

Prefix of patrol vessels: v/s. Colour: dark grey.

Mercantile Marine

Lloyd's Register of Shipping: 262 vessels of 128,973 tons gross

PATROL VESSELS COAST GUARD

I Projected

Displacement: Dimensions: Guns: Machinery:

cIrca 1,000 tons 200×31×13 feet 1...57 mm, 2 diesels. 2 shafts, B.H.P.: 5,000=18 kts. 30

Complement:

General General It was officially stated in Feb. 1965 that a new coast guard vessel of approximately 1,000 tons displacement is in the planning stage.

This will be the first new construction project for the Icelandic Coast Guard Service for about seven years.

ODINN

Measurement; Dimensions:

1,000 tons 200 (w.l.) 207 (o.a.)×31×18 $\frac{1}{2}$ feet 1—57 mm. 2 diesels, 2 shafts. B.H.P.: 5,000 = 18 kts. 30

Complement:

General Designed as a coast guard vessel. Built at Aalborg Vaerft A/S, Denmark. Lard down in Jan. 1959. Launched in Sep. 1959. Completed in Jan. 1960.



ODINN

1964, Icelandic Coast Guard Service, Official

ALBERT

Measurement: Dimensions: Guns Machinery: Complement:

200 tons gross Length: 111½ feet 1—47 mm. 1 Nohab diesel . B.H.P.: 650=12.5 kts.

Launched in 1956. Completed and commissioned for service in Apr. 1957.



ALBERT

1958, Icelandic Coast Guard Service, Official

Disposals
The Coast Guard patrol vessel Gautur (ex-Odinn), also used for surveying, was officially taken out of service on 1 Jan. 1963.

The surveying launch Tyr, ex-R.A.F. pirmace, also used for local fishery protection, was officially deleted from the list in 1964.

The old patrol boat Saebjorg was taken out of service in Aug. 1965 and officially deleted from the Coast Guard Service list.

Loss
The fishery protection patrol vessel and lighthouse tender Hermadur foundered off south-west Iceland on 17 Feb. 1959.

THOR

Displacement:

920 tons

Measurement: Dimensions: Guns:

693 tons gross 183½ (pp), 206 (o.a.)×31½×13 feet 1—57 mm.

Machinery:

2 Crossley diesels, B.H.P.: 3,200=17 kts. 28

Complement:

General eneron Built at Aalborg, Denmark. Launched in 1951. Completed and commissioned in the 1951. Rated as coastal inspection and salvage vessel.



THOR

1963, Icelandic Coast Guard Service, Official

MARÍ IÚLÍA

Measurement: Dimensions:

Guns* Machinery: 138 tons gross Length: 90 feet 1—47 mm, Petters diesel. B.H.P. 470=11:5 kts. 12

Complement:

Built at Frederikssund, Denmark. Launched in 1950. Also used for inshore fishery and hydrographic research.



MARÍA JÚLÍA

Guns:

1961, Icelandic Coast Guard Service, Official

AEGIR

Displacement: Machinery:

507 tons gross 171½ (pp.), 187 (o.a.) \times 29½ \times 14½ feet 1—57 mm. B & W. diesels B.H.P.; 1,300=13·5 kts 25

Complement: Built by Burmeister & Wain, Copenhagen. Launched on 25 Apr. 1929. Rebuilt In 1953. Also used as Research Vessel for offshore and hydrographic research.



AEGIR

1963, Icelandic Coast Guard Service, Official

INDIA

Administration

Chief of the Navy Staff: Vice-Admiral Bhaskar Sadashiv Soman.

Flag Officer Commanding Indian Fleet: Rear-Admiral Benjamin Abrahim Samson.

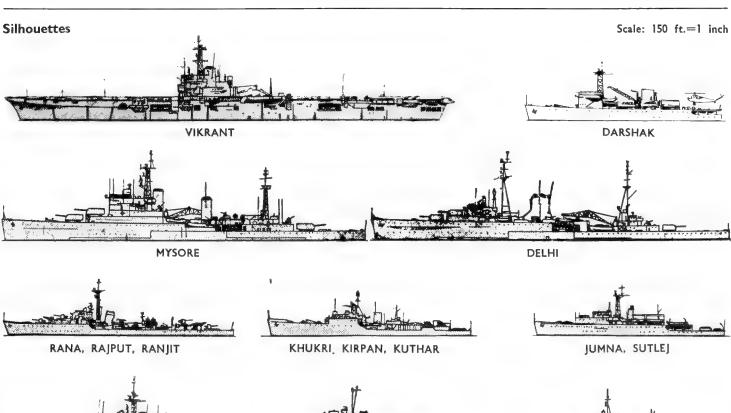
Naval Adviser in London: Commodore N. Krishnan, D.S.C.

Naval Attaché in Washington: Captain Rabindra Nath Batra.

Personnel

1966: 19,500 (1,500 officers, 18,000 ratings) Mercantile Marine

Lloyd's Register of Shipping: 354 vessels of 1,522,693 tons gross





BEAS, BETWA, BRAHMAPUTRA





CAUVERY, KISTNA





AIRCRAFT CARRIER

VIKRANT	(ex-H.M.S.	Hercules)	Pennant No R 11	. Builders Vickers-Armstrong Ltd.,
				Tyne

16,000 tons standard (19,500 tons full load)
Length: 630 (pp.), 700 (o.a.) feet, Beam (hull), '80 feet.
Draught: 24 feet. Width overall, including angled deck and sponsons: 128 feet.
15—40 mm. Bofors AA. (4 twin, 7 single)
21 (capacity)
Parsons single-reduction geared

Guns: Aircraft.

Machinery: Parsons single-reduction geared turbines, 2 shafts. S.H.P.: 40,000=24-5 kts. designed 4 Admiralty 3-drum type 1,343 (designed accommodation) Boilers: Complement:

Engineers
Parsons Marine Steam
Turbine Company General
The construction of this ship was suspended in May 1946. When she was structurally approaching completion and about 75 per cent fitted out the contract was cancelled, and in May 1947 she was laid up at Faslane, Scotland, In Jam. 1957 she was acquired from Great Britain for the Indian Navy, In Apr. 1957 she arrived at Belfast for large scale reconstruction and modernisation by Harland & Wolff Ltd. She was renamed Vikrant and commissioned on 4 Mar, 1961. Habitability
Partially air-conditioned and insulated for tropical service, the ship's sides being sprayed with asbestos cement instead of being lagged. Separate messes and dining halls. Pressed watertight doors of smaller pattern. General

Laid down 14 Oct. 1943

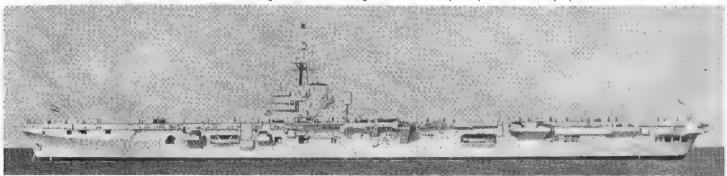
Engineering
Engines and boilers are arranged en echelon, one set of turbines and two boilers being installed side by side in each of the two main propelling machinery spaces, on the unit system. so that the starboard propeller shaft is longer than the port. The boilers work at a pressure of 400 lb. per sq. in. and a temperature of 700 degrees maximum-superheat.

Flight Deck
The aircraft complement, consisting of 10 Seahawk strike, 2 Alouette, and 4 Breguet Alize anti-submarine aircraft, operate from an angled flight deck, which is equipped with a steam catapult, deck landing sights and two electrically operated aircraft lifts.

Launched 22 Sep. 1945

Completed 4 Mar. 1961 (commissioned)

two electrically operated aircraft lifts.

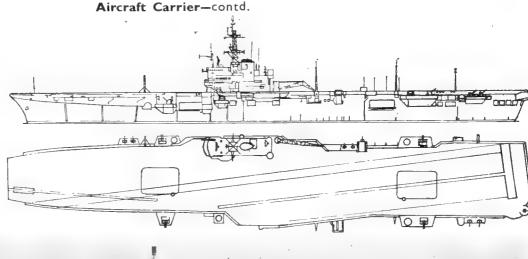


Displacement:

Dimensions:

Class
Originally a sister ship of Leviathan (never completed) and Magnificent (in the Royal Canadian Navy 1946-57) of the Royal Navy: Sydney (ex-Terrible) and Melbourne (ex-Majestic) in the Royal Australian Navy; and Bonaventure (ex-Powerful) in the Royal Canadian Navy.

Drawing
Port elevation and plan. Drawn
in 1962. Scale: 128 feet=1 inch.





VIKRANT

Added 1966, courtesy Godfrey H. Walker, Esq.,

General

In Nov. 1964 the Indian Defence Minister stated that it was intended to purchase from a British ship-yard a modern submarine. She was expected to be basically similar to the British "Oberon" class design,

SUBMARINES

but modified to suit Indian conditions and estimated to be operational in a minimum of three years. In the mean-time a submarine of the Royal Navy would be lent to India for a few months each year to train the

Indian Navy in anti-submarine warfare, But in Aug. 1965 the Indian Defence Minister said it was proposed to purchase six submarines from the U.S.S.R.

CRUISERS

Pennant No. MYSORE (ex-H.M.S. Nigeria) C 60

8,700 tons standard (11,040 tons Displacement: Dimensions:

Guns:

8,700 tons standard (11,040 tons full load)
Length: 538 (pp.), 549 (w.l.), 555½ (o.a.) feet. Beam: 62 feet. Draught: 21 (max.) feet 9—6 inch, 8—4 inch AA. 12—40 mm. AA. (5 twirr, 2 single) 4½".3" side, 2" turrets, 4" C.T., 2" deck Armour:

Parsons geared turbines. 4s S.H.P.: 72,500=31·5 kts. 4 Admiralty 3-drum type 800 Machinery: 4 shafts. Boilers:

Complement:

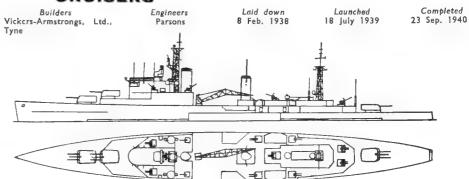
General

General
Formerly a "Colony" class cruiser in the Royal Navy.
Purchased from Great Britain (announced on 8 Apr.
1954) for £300,000. Underwent an extensive refit and reconstruction by Cammell Laird & Co. Ltd., Birkenhead, which was completed at the end of 1957, before commissioning for operational service. Become flagship of the Indian Navy.

commissioning for operational service, become nagship of the Indian Navy.

Transfer

The ship was formally handed over to the Indian
Navy at Birkenhead and renamed Mysore on 29 Aug.
1957.



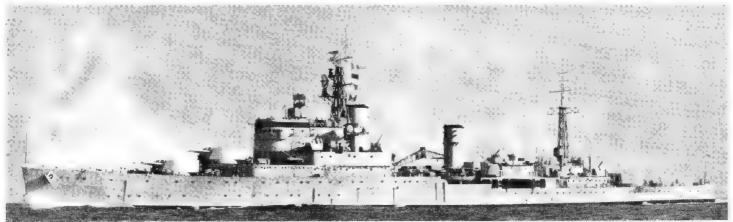
Reconstruction

Reconstruction

Ship formerly had tripod masts. During reconstruction the triple 6 inch turret in "X" position and the 6—21 inch torpedo tubes (tripled) were removed, the bridge was modified, and two lattice masts were stepped. All electrical equipment was replaced and the engine room and other parts of the ship were refitted extensively.

Drawing
Port elevation and plan, Redrawn in 1958. Scale 128 feet=1 inch. Photographs

A port bow surface view of Mysore appears in the 1957-58 to 1960-61 editions, and an oblique aerial view in the 1961-62 to 1965-66 editions.



1966, Indian Navy, Official

Cruisers-contd.

DELHI (ex.H.M.S. Achilles)

Displacement:

Pennant No. C 74.

Dimensions:

Guns:

7,114 tons standard (9,740 tons full load)
Length: 522 (pp.), 544½ (o.a.) feet. Beam, 55½ feet. Draught: 20 feet (max.)
6—6 inch, 8—4 inch AA., 14—40 mm. AA, 4—3 pdr.
Removed (see notes)
4"-2" side, 1" gunhouses, 1" bridge, 2" deck
Parsons geared turbines: 4 shafts.
5.H.P.: 72.000=32 kts.
4 Admiralty 3-drum type
1,800 tons Tubes: Armour:

Machinery:

Boilers:

Oil fuel: Complement:

General
Formerly a "Leander" class light cruiser in the Royal
Navy. Purchased from Great Britain and delivered on
July 1948. Refitted in 1955. Formerly flagship of the
Indian Navy until relieved by Mysore in 1957. Tortiedo Tubes

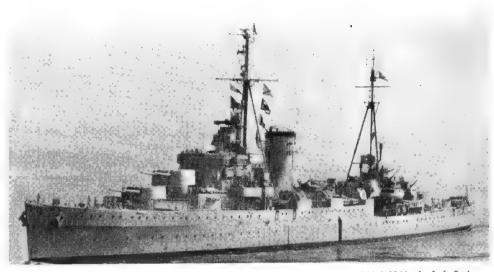
I orpedo Tubes In 1958 the original eight 21 inch torpedo tubes in two quadruple banks, were removed and the forecastle plating was extended aft to the twin 40 mm. AA, guns abreast the boat stowage.

Historical
As H.M.S. Achilles, then lent to the Royal New
Zealand Navy, this ship, with H.M.S. Ajax and H.M.S.
Exeter, defeated the German battleship Admiral Graf
Spee in the battle of the River Plate on 17 Dec. 1939.

Builders Cammell Laird & Co. Ltd., Birkenhead

Laid down 11 June 1931 Launched Sep. 1932

Combleted 5 Oct, 1933



DELHI

Added 1966, A. & J. Pavia

DESTROYERS

Begun 16 Apr. 1941 10 Apr. 1941 19 June 1941 Completed 16 Nov. 1942 27 Aug. 1942 1 Oct. 1942 Builders
Cammell Laird & Co. Ltd.. Birkenhead
John Brown & Co. Ltd., Clydebank
John Brown & Co. Ltd., Clydebank Transferred Launched Pennant No. 1 Apr. 1942 21 Mar. 1942 10 Sep. 1949 29 July 1949 4 July 1949 RANA (ex-H.M.S. Raider)
RAIPUT (ex-H.M.S. Rotherham)
RANJIT (ex-H.M.S. Redoubt) 2 May

3 "R" Class

Displacement:

1,725 tons standard (2,424 tons

Dimensions:

1,725 tons standard (2,424 tons full load)
339\{ (w.l.), 362 (o.a.)\times35\{\frac{1}{2}}\times 16 (max.) feet
4-47 inch, 4-40 mm. AA.
Removed (see Torpedo notes)
4 D.C.T.

Guns:

4 D.C.T.
Parsons geared turbines. 2 shafts.
S.H.P.: 40,000=32 kts.
2 Admiralty 3-drum type
490 tons
2,500 miles at 20 kts. A/S weapons:

Machinery:

Oil fuel: 240

Complement: General

General

These were the first British destroyers with officers' accommodation forward instead of aft. They were refitted and modernised prior to transfer. All three arrived in Indian waters in Jan. 1950. They constitute the 11th Destroyer Squadron of which Rajput is Leader. Torpedo Tubes

Formerly mounted eight 21-inch torpedo tubes in two quadruple banks.

Photographs
Photographs of Rana appear in the 1953-54 to 1957-

58 editions. A photograph of Rajput appears in the 1962-63 to 1965-66 editions.



RANIIT

Added 1966, Indian Navy, Official

Pennant No.

BETWA BRAHMAPUTRA (ex-Panther)

REAS

F 137 F 139 F 31

3 "Leopard" Class

2,251 tons standard (2,515 tons Displacement: full load) 320 (pp.), 330 (w.l.), $339\frac{1}{2}$ (o.a.)×40×11 (mean) $12\frac{2}{3}$ Dimensions:

Guns:

Tubes: A/S weapons; Machinery:

(o.a.)×40×11 (mean) 124 (max.) feet 4—4.5 inch (in two twin turrets), 4—40 mm. AA. Squid triple-barrelled depth charger mortar Admiralty standard range diesels. 2 shafts. B.H.P.: 12,380=25 kts. 230 tons 210 Boilers: Oil fuel:

Radius:

Radius: 230 tons
Complement: 210
General
Brahmaputra (Leader) was originally ordered as the
Panther for the Royal Navy on 28 June 1951. She was
the first major warship to be built is Great Bratain for
the Indian Navy since India became independent. All
three ships are generally similar to the British frigates
of the "Leopard" class, but modified to suit Indian
conditions conditions.

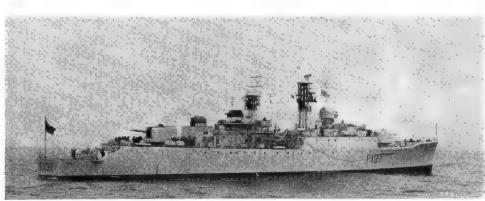
Photographs
A larger port near broadside view of Brahmaputra appears in the 1958-59 to 1960-61 editions, and a starboard bow view of Betwa in the 1961-62 to 1965-66 editions.

ANTI-AIRCRAFT FRIGATES

Builders Vickers-Armstrongs Ltd., Newcastle-on-Tyne Vickers-Armstrongs Ltd., Newcastle-on-Tyne John Brown & Co. Ltd., Clydebank Launched 9 Oct. 1958 15 Sep. 1959 15 Mar. 1957

24 May 1960 8 Dec. 1960 28 Mar. 1958

Combleted



Added 1966, Official

BEAS

ANTI-SUBMARINE FRIGATES

2 "Whitby" Class. Ist Rate

2,144 tons standard (2,545 and 2,557 tons full load, respectively) 360 (pp.), 369½ (o.a.)×14×12 Displacement: Dimensions:

feet
2—4.5 inch. 4—40 mm, AA.,
(twin before Limbos, single abaft funnel)

A/S weapons;

abaft funnel)
2 Limbo three-barrelled depth
charge mortars
2 sets geared turbines, 2 shafts.
S.H.P.: 30.430=over 30 kts. Machinery:

Oil fuel:

400 tons 2 Babcock & Wilcox Boilers: 231 (11 officers, 220 ratings) Complement:

Built in Great Britain and generally similar to the British frigates of the "Whitby" class, but modified to suit Indian conditions, Talwar is a common type of weapon in India.

Torpedo Tubes

Provision was made in the original design for twelve 21 inch (eight single A/S and two twin) but they were not fitted.

Photographs

A larger photograph of Trishul appears in the 1960-61 edition, and a port quarter oblique aerial view of Talwar in the 1961-62 to 1965-66 editions.

TALWAR

TRISHUL (Leader)

Pennant No. F 140

E 143

Builders Cammell Laird & Co. Ltd., Birkenhead Harland & Wolff Ltd., Belfast

18 July 1958

Completed 1960

18 June 1959

1960



TALWAR

Added 1966., Official

3 "Blackwood" Class, 2nd Rate

1,180 tons standard (1,456 tons Displacement:

full load) 300 (pp.), 310 (o.a.) \times 33 \times Dimensions:

11 feet 3—40 mm, Bofors AA, Mk, 9 Provision for 4—21 inch (two twin), but not fitted 2 Limbo three-barrelled depth Guns:

A/S weapons: 2 Limbo three-barrelled charge mortars, Mk. 10
1 set geared turbines. 1 si
S.H.P.: 15,000=27·8 kts. (
max. continuous sea speed)
Babcock & Wilcox
300 tons
150 Machinery: (24-5

Boilers:

Oil fuel:

Complement:

General

Built in Great Britain, and generally similar to the
British frigates of the "Blackwood" class; but without
torpedo tubes and slightly modified to suit Indian requirements. Kirpan means Sword.

Photographs
Photographs of Khukri appear in the 1958-59 to 1965-66 editions.

Pennant No. Builders Launched Combleted 149 144 J. Samuel White & Co. Ltd., Cowes, Isle of Wight Alex Stephen & Sons Ltd., Govan, Glasgow J. Samuel White & Co. Ltd., Cowes, Isle of Wight 20 Nov. 1956 19 Aug. 1958 14 Oct. 1958 July 1958 July 1959 16 F KHUKRI KIRPAN 146 1959



Added 1966, Wright & Logan

GENERAL PURPOSE FRIGATES

3 New Construction

"Leander" Class

General

It is officially stated that three new general purpose frigates are to be built at Mazagon Dockyard, Bombay. They will be generally similar to the Improved Type 12

(Anti-Submarine Versatile Type) frigates the "Leander" class in the Royal Navy, but modified to suit Indian conditions.

FRIGATES (Escort Destroyers)

Laid down 1 Mar. 40 29 May 40 10 Apr. 40 Launched 10 Mar. 41 5 Sep. 41 Combleted Pennant No. 16 Oct. 1941 18 June 1944 16 Aug. 1944 GANGA (ex-H.M.S. Chiddingfold)
GODAVARI (ex-H.M.S. Bedale, ex-Slazak, ex-Bedale)
GOMATI (ex-H.M.S. Lamerton) Scott's Shipbuilding & Engineering Co. Ltd., Greenock D 94 D 92 D 93 R. & W. Hawthorn, Leslie & Co. Ltd., Hebburn Swan, Hunter & Wigham Richardson Ltd., Wallsend 5 Sep. 41 14 Dec. 40

3 "Hunt" Class. Type II

1.050 tons standard (1,610 tons Displacement:

Dimensions:

1.030 tolls standard (1,610 tolls full load)
264\(\frac{1}{4}\) (pp.), 280 (o.a.)\(\times 31\)\(\frac{1}{2}\)\(\times 14\) (max.) feet
6—4 inch AA., 4—20 mm. AA.
Parsons geared turbines. 2 shafts.
S.H.P.: 19,000=25 kts. Guns: Machinery:

Boilers: 2 Admiralty 3-drum type Oil fuel;

280 tons 3,700 miles at 14 kts. Radius; Complement;

200

Complement: 200
General
"Hunt" class, Type II frigates (ex-Escort Destroyers)
F 131, F 126 and F 88, respectively, Transferred from
Great Britain April/May 1953. Lent to Indian Navy for
three years, subject to extension by agreement. Officially
rated as destroyers with D pennant Nos. and constitute
the 22nd Destroyer Squadron, Godavari is Leader.
Phatographs

Photographs
A photograph of Godavari appears in the 1953-54 to 1955-56 editions, and of Ganga in the 1954-55 to 1959, 60 editions.



GOMATI

Added 1966, A. & J. Pavia

Completed 21 Oct. 1943

23 Aug. 1943

FRIGATES (ex-Sloops)

Pen. No.:

F 110 F 46

CAUVERY

KISTNA

KISTNA

2 "Kistna" Class

1,470 tons standard (1,925 tons

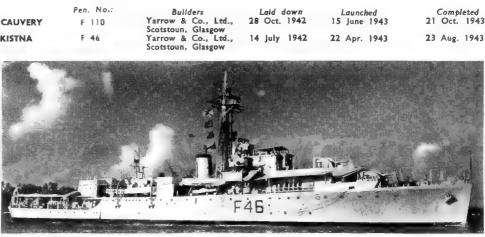
1,470 tons standard (1,925 tons full load)
283 (pp.), 295½ (w.l.), 299½ (o.a.)×38½×11½ feet
4—4 inch, 4—40 mm, AA.
2 D.C.T. Dimensions: Guns:

A/S weapons: Machinery: 2 D.C.1.
Parsons geared turbines, 2 shafts.
S.H.P.: 4,300=19 kts.
2, of 3-drum type
370 tors
4,500 miles at 12 kts. Oil fuel:

Radius: Complement: 240

Displacement:

General
Former sloops of the British "Black Swan" type built for India and modified to suit her conditions. Retained on the effective list, but likely to be disposed of in the ner future. Cauvery and Kistna, together with Jumna (see next page) constituted the 12th Frigate Squadron. Photographs
A photograph of Cauvery appears in the 1955-56 to 1959-60 editions.



1962. Edward Rodwell

Laid down 28 Oct. 1942

14 July 1942

Launched 15 June 1943

22 Apr. 1943

TRAINING FRIGATE

I "River" Class

Builders Laid down
Charles Hill & Sons Ltd., 18 June 1942
Bristol Completed Launched TIR (ex-H.M.S. Bann) 29 Dec. 1942 7 May 1943 F 256

1,463 tons standard (1,934 tons Displacement: full load)
203 (pp.), 303 (o.a.)×363×
14½ feet
1—4 inch, 1—40 mm., 2—20 Dimensions: Guns:

mm.

Machinery: Triple expansion, 2 shafts, 1.H.P.; 5,500=18 kts 2 Admiralty 3-drum type 385 tons Boilers: Oil fuel:

3.100 miles at 12 kts Radius: Complement:

General
Former "River" class frigate in the Royal Navy. Converted to a Midshipmen's Training Frigate by Bombay Dockyard in 1948. Originally the sister ship of Investigator, see below, under survey ships.



1964, Indian Navy, Official

I New Construction

Displacement:

General

Dimensions:

Aircraft:

2,790 tons
319 (o.a.)×49×28¼ feet
1 helicopter
2 diesel-electric propulsion plants
B.H.P.: 3,000=16 kts. Machinery:

Complement:

SURVEY SHIPS Builders:

DARSHAK

Hindustan Shipyard Vizagapatam

Launched: 2 Nov. 1959 Commissioned: 28 Dec. 1964



DARSHAK

1965, Indian Navy, Official

INVESTIGATOR (ex-Khukri, ex-H.M.S. Trent)

I "River" Class (ex-Frigate)

1,460 tons standard (1,930 tons full load) 283 (pp.), 303 (o.a.)×363× Displacement:

Dimensions:

Machinery:

285 (pp.), 303 (e.d.)×363× 14 feet Triple expansion. 2 shafts, I.H.P.: 5,500=18 kts. (max.) 2 Admiralty 3-drum type 150

Boilers: Complement;

General Former "River" class frigate in Royal Navy. Converted to a surveying vessel and remamed Investigator in 1951. Originally the sister ship of the training frigate Tir, see above.

Pennant No. F 243

Builders Hill & Sons Ltd., Bristol

Laid down 31 Jan. 1942

Launched 10 Oct. 1942

Completed 15 Feb. 1943



INVESTIGATOR

1965, Indian Navy, Official

2 "Sutlej" Class

(Ex-Frigates, ex-Sloops)

Displacement:

1.300 tons standard (1.750 tons

Dimensions:

full load) 276 (w.l.), $292\frac{1}{2}$ (o.a.)×37 $\frac{1}{2}$ ×

114 feet Machinery:

Parsons geared turbines. 2 shafts. S.H.P.: 3,600=18 kts. Boilers: Admiralty 3-drum type

Oil fuel: 370 tons

5,600 miles endurance at 12 kts. Radius: Complement:

General

Former frigates employed as survey ships since 1957 and 1955 respectively.

Both the above ships are generally similar to the former British frigates of the "Egret" class.

Jumna and Sutlej, together with Cauvery and Kistna (see previous page) formerly constituted the 12th Frigate Squadron.

Conquest

Afonso de Albuquerque, former Portuguese frigate disabled and taken in the Goa conquest in Dec. 1961, was incorporated into the Indian Navy after repairs.

Disposals of Ocean Minesweepers
Of the old ocean minesweepers, Rohlikhand and Rajputona were disposed of in 1960, and Bombay and Madras in 1961. Bengal and Konkan will be discarded in the near future (see full particulars and photographs in the 1959-60 edition).

Survey Ships-contd.

Pennant No.

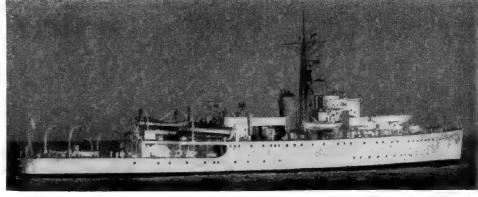
JUMNA SUTLEI F 95 Builders
Wm. Denny & Bros.
Ltd. Dumbarton
Wm. Denny & Bros.
Ltd. Dumbarton

Laid down 20 Feb. 1940 4 Jan. 1940

Launched 16 Nov. 1940

Completed 13 May 1941

23 Apr. 1941 1 Oct. 1940



JUMNA

1962, A. & J. Pavia



SUTLE

1958. Indian Navy, Official

COASTAL MINESWEEPERS

4 "Ton" Class

CANNANORE (ex-Whitton) M 1191 KAKINADA (ex-Durweston) M 1201 CUDDALORE (ex-Wennington) M 1190 KARWAR (ex-Overton) Leader M 1197

Displacement:

Dimensions: Guns:

Machinery: Oil fuel:

360 tons standard (425 tons full load) 140 (pp.), 153 (o.a.)×28½×8½ feet
1—40 mm. Bofors AA., 2—20 mm. AA.
Napier Deltic diesels. 2 shafts. B.H.P.: 1,250=15 kts.

tons

Complement:

45 40

General

"Ton" class coastal minesweepers of wooden construction built for the Royal
Navy, but transferred from Great Britain to the Indian Navy in 1956. Cannanore
built by Fleetlands Shipyard, Ltd., Gosport, launched 30 Jan. 1956; Karwar built
by Camper & Nicholson, Ltd., Gosport, launched 30 Jan. 1956. Cuddalore built
by J. S. Doig Ltd. Grimsby, and Kaklnada built by Dorset Yacht Co. Ltd.,
Hamworthy, taken over in August 1956, and sailed for India Nov./Dec. 1956.
Named after minor ports in India. Constitute the 18th Minesweeping Squadron,
together with the inshore minesweepers. Four more are to be acquired, Coastal
minesweepers will first be built at the dockyards acquired by the Indian Navy
in Bombay and Calcutta. in Bombay and Calcutta, Photographs

A photograph of Cannanore appears in the 1957-58 to 1963-64 editions.



CUDDALORE

Added 1965, J. W. Kennedy



KARWAR

1964, A. & J. Pavia

INSHORE MINESWEEPERS

2 "Ham" Class

BASSEIN (ex-Littleham) M 2707

BIMLIPTAN (ex-Hildersham) M 2705

Dimensions:

Guns: Machinery:

120 tons standard (170 tons full load)
98 (pp.), 107 (o.a.)×22×63 feet
1—20 mm. Oerlikon AA.
2 Paxmar diesels: B.H.P.: 550=14 kts. (9 kts

Oil fuel: Complement: sweeping) 16

Complement: 16
General
"Ham" class inshore minesweepers of wooden construction built for the Royal
Navy but transferred from Great Britain to the Indian Navy in 1955. Basseln was
built by Brooke Marine Ltd., Oulton Broad. Lowestoft, and launched on 4 May 1954;
Bimlipitan was built by Vosper Ltd., Portsmouth, and launched on 5 Feb. 1954.

Disposals

Bard (ex-MMS 132), MMS 130 and MMS 154, former British motor minesweepers
of "105" ft." type, of wooden construction, transferred from Great Britain, have
been relegated to yard craft. MMS 1632 and MMS 1654 are yard craft in Bombay.



RIMLIPITAN

Added 1966, A. & I. Pavia



BASSEIN

1965, Indian Navy, Official

SEAWARD DEFENCE BOATS

3 "Ajay" Class

Displacement:

AJAY

Dimensions:

120 tons standard (146 (A)ay) and 151 (Abhay, Akshay) tons full load) 110 (pp.], 117 $\frac{1}{4}$ (o.a.) \times 20 \times 5 feet 1—40 mm. AA. 2 diesels. Speed=18 kts.

Guns: Machinery:

General Generally similar to the "Ford" class in the Royal Navy. Ajay was built by Garden Reach Workshop, Calcutta and commissioned on 21 Sep. 1960. Abhay and Akshay were both built by Hoogly Docking and Engineering Company Ltd., Calcutta and commissioned on 13 Nov. 1961 and 8 Jan. 1962, respectively.



AIAY

1964, Indian Navy, Official

2 "Sharada" Class

SHARADA SDB 3133

SUKANYA SDB 3132

Displacement: Dimensions: Guns: Machinery:

86 tons 103½ feet length Small arms Diesels

Built in Yugoslavia, Commissioned on 5 Dec. 1959 and 12 Dec. 1959, respectively.



SHARADA

1964, Indian Navy, Official

4 "Savitri" Class

SAVITRI SDB 3123

SHARYU SDB 3129

SUBHADRA SDB 3130 SUVARNA SDB 3131

Displacement: Dimensions: Guns:

63 tons $85\frac{1}{2}$ (pp.), $90\frac{1}{4}$ (o.a.) $\times 20 \times 5$ feet Small arms

Machinery:

diesels. 2 shafts. B.H.P.: 1,900=21 kts.

Built in Italy. Commissioned on 6 Feb. 1958, 28 Oct. 1957, 20 Aug. 1957 and 28 Aug. 1957, respectively. Constitute the 322nd SDB Squadron, of which Sharyu is Leader.



SAVITRI

1964, Indian Navy, Official

REPAIR SHIP

DHARINI (ex-Hermine)

Displacement: Dimensions: Machinery: Oil fuel:

4,625 tons 328×46×19 feet Triple expansion 621 tons

General

Cargo ship converted to a tender. Officially rated as a repair and store ship. Commissioned in May 1960.



DHARINI

1964, Indian Navy, Official

SEAWARD PATROL CRAFT

4 HDML Type

SPC 3110 (ex-HDML 1110) SPC 3112 (ex-HDML 1112)

SPC 3117 (ex-HDML 1117) SPC 3118 (ex-HDML 1118)

Displacement:

48 tons standard (54 tons full load)

Displacement Dimensions: Guns:

72 (o.a.)×16×43 feet 2—20 mm. AA. Diesel. 2 shafts, B.H.P.; 320=12 kts. Machinery: Complement:

General

AKSHAY

Former British Harbour Defence Motor Launches. These boats, formerly known as Seaward Defence Motor Launches, constitute the 321st Sea/Land Patrol Craft Squadron.

Recent Disposal

The seaward patrol craft SPC 6420 (ex-ML 6420, ex-ML 420) of the Fairmile "B" motor launch type, was stricken from the Navy list in 1963.



SPC 3112

Indian Navy, Official

LANDING SHIP

MAGAR (ex-H.M.S. Avenger, LST (3) 3011)

Displacement: Dimensions: Guns: Machinery:

Complement:

2,256 tons light (4,980 tons full load) $347\frac{1}{2}$ (o.a.) \times 55 $\frac{1}{2}\times11\frac{1}{2}$ feet 2—40 mm, AA., 6—20 mm. AA. (2 twin 2 single) Triple expansion. 2 shafts, I.H.P.: 5,500=13 kts.

Genera!

Former British tank landing ship of the LST (3) type transferred in 1949.



MAGAR

Added 1964, A. & J. Pavia

LANDING CRAFT

LCT 4294

Displacement: Dimensions: Machinery:

200 tons $187\frac{1}{4} \times 38\frac{3}{2} \times 3\frac{1}{2}$ feet Speed 9.5 kts.

3,000 added to original numbers, LCT 4117, 4298, 4315, 4358 and 4360 were discarded in 1957, and LCT 4310 in 1961. LCT 4294 is relegated to a yard craft.

OILERS

SHATKE

Displacement: Dimensions: Machinery:

3,500 tons $323\times44\times20$ feet Diesel, Speed: 13 kts. (max.), 9 kts. (economical)

Rated as Fleet Replenishment Group Tanker, Acquired from Italy in Nov. 1953.

CHILKA

Displacement: Dimensions:

Machinery

SAMBHAR 1,530 tons (officially revised figure)

7002×303×13 feet Triple expansion. I.H.P.: 809=9 kts. 1,000 tons

Oil capacity:

General
Chilka built by Blythwood Shipbuilding Co., Scotstoun. Sambhar by A. & J. Inglis, Ltd., Glasgow, laurched 1942. Both acquired in 1948. Engined by David Rowan & Co. Two steam dynamos, two steam pumps, ballast pump. Rated as yard craft.

TUG

HATHI

General

Displacement: Dimensions: Machinery:

668 tons $147\frac{1}{2}\times32\frac{2}{3}\times15$ feet Triple expansion. Speed=13 kts.

Complement: 45

Built by the Talkoo Dock & Engineering Company, Hong Kong. Launched in 1932.

INDONESIA

Administration

Minister of the Navy and Chief of Naval Staff: Vice-Admiral Raden Edi Martadinata

Deputy Chief of Naval Staff: Commodore R. Muljadi

Commander-in-Chief Indonesian Fleet: Commodore Hamsah Atmohandojo

Naval and Air Attaché in London: Colonel M. Slamat

Naval and Air Attaché in Washington: Brigadier General Indro Soebagio.

Personnel

Navy: 25,300 (2,300 officers, 23,000 men)
Total: 34,200 (including 3,550 Marine Corps.
Fleet Air Arm, and Commando Corps)

Mercantile Marine

Lloyd's Register of Shipping: 414 vessels of 505,091 tons gross

SUBMARINES

12 Ex-U.S.S.R. "W" Class NANGGALA

ALUGORO Displacement;

1,030 tons (surface): 1,180 tons

TJAKRA

Dimensions:

1,030 tons (surface): 1,180 tons (submerged) 240 (0.4)×22×15 (max.) feet 2—57 mm., 2—25 mm. 6—21 inch (4 forward, 2 aft). 14 torpedoes carried 40 mines or 20 torpedoes Diesel-electric. Twin screws Diesels. B.H.P.: 4,000=17 kts. (surface). Electric motors: H.P.: 2,500=15 kts. (submerged) 13,000 to 16,500 miles 60

Radius: Complement:

General

Mines: Machinery:

Former Soviet submarines of the medium sized, long range "W" class. Nanggala and Tjakra were purchased from Poland and transferred to the Indonesian Navy in Aug. 1959. Nanggala was overhauled at Surabaja in

1960. Pennant Nos, 402 and 401, respectively, Alugoro:

Pennant No. 512.

The four Soviet submarines of the "W" class, which arrived in Indonesia on 28 June 1962, brought the total

number of this class transferred to Indonesia by the U.S.S.R. to 14 units, but it is reported that only six will be maintained operational, while six are kept in reserve and two used for spare parts.



Indonesian Navy, Official

CRUISERS

1 Ex-U.S.S.R. "Sverdlov" Class

IRIAN (ex-Ordzhonikidze)

Displacement:

Dimensions:

Guns:

15,450 tons standard (19,200 tons full load)
656 (pp.), 689 (o.a.) feet Beam: 70 feet Draught: 16 (mean), 24\frac{1}{2} (max.) feet 12—6 inch (four triple); 12—3.9 inch (six-twin); 32—37 mm. AA. (16 twin)

Tubes: Mines: Armour:

TJAKRA

Machinery: Boilers:

Oil fuel: Radius: Complement: 10—21 inch (two quintuple)
140 to 250 capacity
4" to 1½" belt; 5" turrets; 6"
C.T.; 3" to 1" decks
Geared steam turbines. 2 shafts,
S.H.P.: 130,000=34.5 kts.

4,000 tons 5,000 miles at 20 kts. 1,050

General Irlan was transferred from the U.S.S.R. to Indonesla where she arrived in Oct. 1962. Pennant No. 201. A second Soviet cruiser was to have been acquired by the end of 1963, according to the Indonesian (then) Deputy Chief of Naval Staff. She was being modified to suit Indonesian requirements and conditions in the equatorial climate, and her armament was to be different from that of her sister ship. But in fact only one "Sverdlov" class cruiser had been transferred from the U.S.S.R. to Indonesia by 1966.



Added 1963, Wright & Logan

7 Ex-U.S.S.R. "Skoryi" Class

BRAWIDIADIA DIPONEGORO ISKANDARMUDA

Guns:

SANDJAJA SAWUNGGALING SILIWANGI SINGAMANGARADJA

Displacement: Dimensions:

2,600 tons standard (3,500 tons full load)
393½ (pp.), 420 (o.a.)×41×
13½ feet
4...5-1 inch (twin), 2...3 inch
AA., 7...37 mm. AA. (Some have
8...37 mm. AA. in twin mounts).
10...21 inch 10—21 inch 4 D.C.T.

Tubes: A/S weapons: Mines: Machinery:

Geared tubines. 2 shafts. S.H.P.: 70,000=38 kts. Boilers: 4,000 miles at 15 kts.

Radius:

Complement: 4,000 miles at 15 kts.

General
Former Soviet destroyers of the "Skoryi" type. Built
in 1951-56. Four were purchased from Poland and transferred to the Indonesian Navy in 1959. Penmant Nos.

DESTROYERS

203, 204, 201 and 202, respectively. Pennant No. of Singamangaradja (which means Gannet) was reported in 1963 as 302. Sawunggaling was originally named Sarwadjala. Iskandandarmuda was transferred in 1962 and Brawidjadja and Diponegoro in 1964.

Disposal Gadjah-Mada (ex-Tjerk Hiddes, ex-Nonparell) a destroyer of the British "N" class, purchased from Great Britain by the Netherlands in 1941, and transferred from the Royal Netherlands Navy to the Indonesian Navy on 1 Mar. 1951, was reported scrapped in 1961.



SILIWANGI

Indonesian Navy, Official

Destroyers-contd.



SANDIAIA

Indonesian Navy, Official

FRIGATES

7 Ex-U.S.S.R. "Riga" Class

405

Displacement:

1,200 tons standard (1,600 tons

Dimensions:

Guns:

Tubes:

A/S weapons; Mines:

1,200 tons standard (1,600 tons full load)
278½ (pp.), 295 (o.a.)×31½×
9½ (mean), 11 (max.) feet
3—3.9 inch d.p. (sigle), 4—37 mm. AA.
3—21 inch
4 depth charge projectors
Fitted with mine rails
Geared steam turbines. 2 shafts.
S.H.P.: 25,000=28 kts.
2

Machinery: Boilers:

General General

Two "Riga" class frigates, pennant Nos. 405 and
406, were transferred from the U.S.S.R. to Indonesia
with the cruiser Irian in Sep. 1962. Two more were
transferred the following year and three more a year



RIGA Class

Sergei Romanov

2 "Surapati" Class (Light Destroyers)

Displacement:

1,150 tons standard (1,500 tons

Dimensions:

295¼ (pp.), 325 (o.a.)×36× 8½ feet

Guns:

8½ feet
4—4 inch (102 mm.) 46 cal.
AA. in two twin mounts, 6—30
mm. (3 twin), 6—20 mm. AA.
(3 twin)
3—21 inch
2 Hedgehogs, 4 D.C.T., 1 D.C.

Tubes: A/S weapons:

track

Machinery:

track
2 sets Parsons geared turbines. 2
shafts. S.H.P.: 24,000=32 kts.
2 Foster Wheeler
350 tons
2,800 miles at 22 kts. (cruising

Boilers:

Oil fuel:

Radius:

speed) 200

Complement:

General Fast frigate or light destroyer type. Both built at Ansaldo Yard, Leghorn, Italy. Photographs

A photograph of Imambondjol appears in the 1958-59 edition.

IMAMBONDJOL SURAPATI

Pennant No. 250 251

Laid down 8 Jan. 1956 Jan. 1956

5 May 1956 5 May 1956

Completed 19 May 1958 28 May 1958



SURAPATI

1959, courtesy Ansoldo, Builders

2 "Pattimura" Class (Escort Sloops)

Displacement:

950 tons standard (2,200 tons full load)
246 (pp.), 270¼ (o.a.)×34×9
feet

Dimensions: Guns:

2-3 inch, 40 cal. AA., 2-30 mm. 70 cai. Hispano Suiza AA:

A/S weapons:

(twin)

2 Hedgehogs, 4 D.C.T., 1 D.C. track.

Machinery;

Oil fuel:

track.
3 Ansaldo-Fiat diesels. 3 shafts.
B.H.P.: 6,900=22 kts.
100 tons
2,400 miles at 18 kts. (cruising

Radius:

speed) Complement:

General

Small sloop or fast corvette type. Both built at Ansaldo Yard, Leghorn, Italy.
Photographs

A photograph of Pattimura appears in the 1958-59 to 1962-63 editions.

PATTIMURA HASANUDIN

Pennant No 252 253

Laid down 8 Jan. 1956 8 Jan. 1956

Launched 1 July 1956 24 Mar. 1957

Completed 28 Jan. 1958 8 Mar. 1958



PATTIMURA

Added 1966, courtesy Dr. Ing. Luigi Accorsi

PATROL VESSELS

8 Ex-U.S.S.R. "Kronstadt" Class Submarine Chasers

MADIDIHANG MOMARE TJUTJUT KATIHA LAPAI LUMBA-LUMBA 300 tons $167\frac{1}{2}\times19\frac{1}{3}\times9$ feet $1-3\cdot9$ inch, 2-37 mm, AA., 3-20 mm, AA. Depth bomb projectors Fitted for laying Diesels. 2 shafts, B.H.P.:=27 kts. Displacement: Dimensions;

Guns: A/S weapons: Mines.

Machinery: Oil fuel: tons Complement: 40

General Former Soviet patrol vessels or submarine chasers of the "Kronstadt" type. Built in 1951-1954. Transferred to the Indonesian Navy on 30 Dec. 1958, Pennant Nos. to 308



"Kronsdadt" Class

1961, Indonesian Navy, Official

4 Ex-U.S. PC Type Submarine Chasers

TJAKALANG (ex-U.S.S. Pierre, PC 1141) TORANI (ex-U.S.S. Manville, PC 581) HUI (ex-U.S.S. Malvern, PC 580) TENGGIRI (ex-U.S.S. PC 1183)

Displacement:

280 tons standard (450 tons full load) 170 (w.l.), $173\frac{3}{4}$ (o.a.) $\times 23 \times 7\frac{1}{2}$ (mean), $10\frac{3}{4}$ (max.) Dimensions;

feet 1—3 inch, 1—40 mm. AA., 2—20 mm. AA., 4 2 G.M. diesels. 2 shafts. B.H.P.: 2,880=20 kts. 4 D.C.T. Machinery:

Oil fuel: 60 tons Radius:

5,000 miles at 10 kts, 54 (4 officers, 50 men)

General General Former American submarine chasers of the steel-hulled PC type. Pierre was transferred from the U.S. Navy at Pearl Harbour, Hawaii, in Oct. 1958 and renamed Tjakalang. Malvern and Manville were transferred by the U.S.A. under the Mutual Defense Assistance Program in Mar. 1960 and renamed Hul and Torani, respectively. Pennant Nos. 318, 309, 313 and 317, respectively.

Alu-Alu (ex-U.S.S. PC 787) was officially removed from the effective list in 1961.

Builders Laid down Launched

Hul Albina E. & M. Works, Portland, Ore 22 Jan. 42 29 Apr. 42 26 Sep. 42 Tenggirl Gibbs Gas Engine Co. Jacksonville, Fla. 27 Oct. 42 7 July 43 7 Dec. 43 Tjakalong Defoe S.B. Corpn., Bay City, Mich 12 Mar. 43 22 June 4328 Dec. 43 Toranl Albina E. & M. Works, Portland, Ore 12 Feb. 42 8 July 42 9 Oct. 42



TINGGIRI

1966, Indonesian Navy, Official

CORVETTES

3 "Banteng" Class (Ocean Minesweepers)

BANTENG (ex-Ambon, ex-H.M.A.S. Cairns, 7 Oct. 1941).
PATI UNUS (ex-Tidore, ex-H.M.A.S. Tamworth, 14 Mar. 1942)
RADJAWALI (ex-Banda, ex-H.M.A.S. Wollongong, 5 July 1941)

815 tons standard (1,025 tons full load)
162 (pp.), 186 (o.a.)×31×8½ feet
1—4 inch, 1—40 mm. AA., 4—20 mm. AA.
Triple expansion, 2 shafts, 1.H.P.: 2,000=15·5 kts.
170 tons
4,300 miles at 10 kts.
56 to 70. Displacement: Dimensions: Guns:

Tubes: Machinery:

Complement:

General
All built in Australia as ocean minesweepers, Banteng and Pati Unus by Walkers,
Maryborough, Hang Tuah by Evans Deakin, Brisbane, and Radjawall by Cockatoo
Docks and Eng. Co Launch dates above. Hang Tuah and Pati Unus were transferred
from the Royal Netherlands Navy on 28 Dec. 1949, Banteng and Radjawall on 6 Apr.
1950. Hang Tuah (ex-Morotal, ex-Ipswich) was reported to have been sunk by rebel
planes off Balikpapan, East Borneo, on 28 Apr. 1958. Pati Unus has been removed
from the fleet and transferred to the Training Establishment as training ship for
ratings. Pennant Nos.: 254 (Radjwall), 255 (Banteng) and 256 (Pati Unus), A
photograph of Radjawall appears in the 1955-56 to 1960-61 editions.

MOTOR TORPEDO BOATS

7 German-Built "Jaguar" Type

MADJAN KUMBANG SERIGALA ADJAK ANOA HARIMAU

Displacement:

Dimensions:

Guns: Machinery:

150 tons
131 (pp.), 138 (o.a.)×25×5 feet
2—40 mm. AA. (single)
4—21 inch
4 Daimler-Benz diesels. 4 shafts. B.H.P.: 12,000=
40-42 kts.
39 Oil fuel: Radius:

Complement:

General

General
Built to the order of the Indonesian Navy by the German yard Fr. Lürssen, Bremen-Vegesack in 1959-60. Fast patrol boats similar to the motor torpedo boats or schnell-boote of the "Jaguar" class in the West German Navy (Bundesmarine). The first four boats had wooden hulls, but the second four were built of steel. Penrant Nos. 601, 602, 603, 604, 605, 606, 607 and 608. A photograph of Harimou appears in the 1960-61 edition (page 434 Addenda). Loss

The motor torpedo boat Matian Tutul of this class was reported to have been sunk in an engagement with Netherlands forces off West New Guinea on 15 Jan. 1962.



SINGA

Indonesian Navy, Official

24 Ex-U.S.S.R. "P 6" Class

ANGIN KUMBANG

75 tons standard (100 tons full load) $88\times21\times5\frac{1}{4}$ feet 4—25 mm. AA. (two twin) 2—21 inch (two single) Speed=45 kts. approx. (max.) Displacement: Dimensions:

Guns: Tubes: Machinery:

General Former Soviet interchangeable motor torpedo boats of the "P 6" class. A total of 24 are reported to have been delivered since 1961, including eight in 1961, and six in 1962. Only one name, Angin Kumbang, pennant No. 1613, has been notified. The eight motor torpedo boats delivered in Aug.-Sep. 1961 formed Indonesia's Second Torpedo Boat Squadron.

FLEET MINESWEEPERS

6 Ex-U.S.S.R. "T 43" Class

500 tons standard (600 tons full load) 200×27½×9 feet 4—37 mm. AA.; 8—13 mm. AA. Diesels. 2 shafts. Speed=17 kts. Displacement: Dimensions:

General

Former Soviet fleet minesweepers of the "T 43" type transferred to Indonesia by the U.S.S.R., four in 1962 and two in 1964.

On 27 Feb. 1959 Indonesia amounced she would acquire from the U.S.A, two

minesweepers to be used as patrol craft.

COASTAL MINESWEEPERS

10 "R" Class (Raum-boats)

PALAU RASS 503 PALAU RANGSANG 506 PALAU RAU 501

PALAU REMPANG 508 PALAU RENGAT 509 PALAU RINDJA 507 Displacement:

139.4 tons standard 129×183×5 feet 1—40 mm, AA., 2—20 mm. AA. 2 M.A.N. diesels, 12 cyl. (V motor type) B.H.P.: 2,800=24.6 kts. Dimensions: Machinery:

Complement: General

Guns:

Built in Germany by Abeking & Rasmussen Yacht-und Bootswerft, Lemwerder I.O. in 1945-57. These boats have a framework of light metal covered with wood. Pennant numbers against names above. Pennant No. of Palau Roas was reported in 1963 as



PALAU ROTI

Indonesian Navy, Official

PALAU ROMA 502 PALAU ROTI 504 PALAU RUPAT 505 PALAU RUSA 510

DJOMBANG DIAMPEA Displacement:

ENGGANO (ex-Hino Maru) 175 tons 106² (pp.), 113² (Flores 114¹ (o.d.)×18²×6¹ feet 1 Enterprise diesel, B.H.P.; 360=12·5 kts.

Dimensions:

General First three were commissioned in 1941. Flores was completed by the Japanese during the occupation of Java. First two were built at Droogdak Maatschappij, and the other two at Droogdok Mij, Tandjorg Priok, Used as auxiliary minesweepers by the Royal Netherlands Navy. Enggaño was re-named by Japanese. These ships were recovered after the war.

I Ex-U.S.S.R. "T 301" Class

Displacement:

130 tons 100×16×4½ feet 2—37 mm. AA. Diesels. B.H.P.: 480=10 kts. Dimensions: Guns: Machinery:

General Former Soviet inshore minesweeper of the "T 301" type reported to have been transferred from the U.S.S.R. to Indonesia in 1962.

PATROL BOATS

6 Ex-Yugoslavian "Kraljevica" Class Submarine Chasers

BUBARA
DORANG
Disp

JAJANG KRAPU

LEMADANG TODAK

placement: Dimensions: Guns: A/S weapons: Machinery: Oil fuel: 190 tons standard (245 tons full load)
134½×20½×7 feet
1—3 inch, 1—40 mm. AA., 6—20 mm. AA.

D.C. 2 M.A.N. diesels. 2 shafts. B.H.P.: 3,300=20 kts. 15 tons

,500 miles at 12 kts. Radius:

Complement:

Former Yugoslavian patrol boats of the "Kraljevica" or "PBR 500 class. Purchased from Yugoslavia and transferred to the Indonesian Navy on 27th Dec. 1958. Pennant Nos. 310 to 312 and 314 to 316.



LAJANG

1961, Indonesian Navy, Official

5 "Mawer" Class Submarine Chasers

New Construction Indonesia is reported to be building five submarine chasers of the "Mawar" class in her own yards.

MOTOR GUNBOATS

12 Ex-U.S.S.R. "Komar" Class Guided Missile Patrol Boats

Displacement: Dimensions: Guided weapons:

75 tons standard (100 tons full load) $88\times21\times5^{\frac{1}{2}}$ feet 2 launchers in twin housing with missiles of 10 to 15 nautical miles range Speed=40 kts.

Machinery:

General

Former Soviet guided missile patrol boats of the "Komar" class. Six were transferred to Indonesia in 1961-63, four more in Sep. 1964 and two in 1965.

18 Ex-U.S.S.R. "BK IV" Class

General

Reported to have been transferred from the U.S.S.R. to Indonesia in 1962. Fitted

with large gun mounting.

Ten Soviet-built gunboats are reported to have been transferred to Indonesia at Djakarta 11 Oct. 1961.

3 U.S. PGM Type

PGM 55

PGM 56 100 tons Length: 95 feet 1—40 mm, AA. Speed 16 kts.

Displacement: Dimensions: Guns: Machinery:

General
Built in the United States to a PGM type motor gunboat design for transfer to Indonesia under the Military Aid Programme.

SEAWARD DEFENCE CRAFT

25 Ex-HDMI Patrol Boat Types

			/ 1	
PP 01	PP 06	PP 011	PP 016	PP 021
PP 02	PP 07	PP 012	PP 017	PP 022
PP 03	PP 08	PP 013	PP 018	PP 023
PP 04	PP 09	PP 014	PP 019	PP 024
PP 05	PP 10	PP 015	PP 020	PP 025

Displacement: Dimensions: Guns: Machinery:

46 tons standard (54 tons full load)
72 × 16 × 5} feet
1-37 mm., 2-20 mm. Oerlikon M.G.
2 diesels. 2 shafts. B.H.P.: 300=11 kts.

All ex-Netherlands patrol boats. Built in 1943-46. Formerly British HDML type RP 109, RP 111, RP 112, RP 114 and RP 118 ex-HDML 1451, HDML 1472, HDML 1473, HDML 1454 and HDML 1449).

Displacement: Dimensions: Guns: Machinery: Complement:

44 tons standard (56 tons full load)
62 (o.a.) × 18½ × 4 feet
1—20 mm. AA., 1 M.G.
1 diesel. B.H.P.: 165=10 kts.

General
Built in 1945-46. Former American Higgins type motor launches, later Netherlands
RP-120, RP 121, RP 122, RP 125, RP 127, RP 128, RP 130, RP 134 and RP 136,
transferred to Indonesia in 1950.

Displacement:

54 tons 1—40 mm. AA., 2—20 mm. AA. D.C.T. Speed=11 kts. 10

Guns: A/S weapons: Machinery: Complement:

Former Netherlands motor launch RP 138, transferred by the Royal Netherlands Navy in 1950. A photograph of this type appears in the 1951-52 to 1960-61 editions.

SUBMARINE SUPPORT SHIPS

MULTATULI

3.220 tons 338(pp.), 365\(\frac{1}{2}\) (o.a.) \times 52\(\frac{1}{2}\) \times 23 feet 1.—85 mm., 4.—40 mm. (single mountings) 8. & W. diesel. B.H.P.: 5,500=18\(\frac{1}{2}\) kts. (max.), 16 Displacement: Dimensions: kts. cruising 1,400 tons

1,400 tons 6,000 miles at 16 kts. 134 Oil fuel: Radius: Complement:

Built in Japan by Ishikawajima- Harima Heavy Industries Co. Ltd., as a submarine tender. Launched on 15 May 1961. Delivered to Indonesia in Aug. 1961. Pennant No. 476. Flush decker. Capacity for replenishment at sea (fuel oil, fresh water, provisions, ammunition, naval stores and personnel). Medical and hospital facilities. Equipment for supplying compressed air, electric power and distilled water to submarines. Air conditioning and mechanical ventilation arrangements for all living and working quarters.



MULTATULI

1962, Indonesian Navy, Official

I Ex-U.S.S.R. "Don" Class

RATULANGI

4,750 tons standard (6,000 tons full load) $450\times49\times17$ feet 4—3·9 inch, 12—37 mm. AA. Diesels. Speed=21 kts. (approx.) 300 Displacement:
Dimensions:
Guns:
Machinery: Complement:

General

General A submarine support ship, escort vessel and maintenance tender of the "Don" class, transferred from the U.S.S.R. to Indonesia in 1962, arriving in Indonesia in July with Soviet pennant No. 441.

I Ex-U.S.S.R. "Atrek" Class

THAMRIN

Displacement: Measurement: Dimensions:

3,500 tons standard 3,258 tons gross 336 \times 49 \times 20 feet Steam expansion and exhaust turbine. I.H.P.: 2,450= 13 kts. Machinery

3,500 miles

General
Former Soviet advanced submarine parent ship of the smaller tender type. Built in 1955-57 and converted to naval use from a mercantile freighter. Arrived in Indonesia on 28 June 1962 as a transfer from the U.S.S.R. "Atrek" class.

TRAINING SHIPS

PGM 57

NANUSA
Displacement:
Dimensions: Guns:

Machinery: Boilers: Complement:

100 (accommodation for 350 ratings under training)

General
Transferred to the Indonesian Navy in 1958. A converted freighter.

DEWARUTJI

810 tons standard (1,500 tons full load) 191½(o.a.), $136\frac{1}{6}$ (pp.) \times $31\frac{1}{6}$ × $13\frac{1}{6}$ feet M.A.N. diesel engine. B.H.P.: $600=10\cdot5$ kts. 110 (32+78 midshipmen) Displacement: Dimensions: Machinery: Complement:

Training ship for Indonesian Navy, built in Germany by H. C. Stülcken & Sohn, Hamburg, Launched on 24 Jan. 1953. Completed on 9 July 1953. Barquentine of iron construction. Sail area, 1,305 sq. yds. (1.091 sq. metres). Speed with sails 12.8 kts. A photograph of this ship appears in the 1954-55 to 1960-61 editions.

SURVEYING VESSELS

BURDIAMHAL

Displacement: Dimensions: Machinery: Complement:

1,200 tons 211} (o.a.), 192 (pp.)×33½×10 feet 2 Werkspoor diesel engines. B.H.P.; 1,160=10 kts. 90

General
Built by Scheepswerf De Waal, Zalthomme. Launched on 6 Sep. 1952. Completed on 6 July 1953. A photograph of this ship appears in the 1954-55 to 1960-61 editions.

SAMUDERA

Measurement: Dimensions: Machinery:

200 tons gross $125\frac{1}{4}\times21\frac{1}{2}\times9\frac{3}{4}$ feet Werkspoor diesel engine, B.H.P.: 450

General
Built by Ferus Smit, Foxol. Launched on 28 May 1952. Completed on 28 Aug. 1952.
Same type as "Bango" class motor patrol vessels, equipped as a laboratory ship. Used for deep sea exploration in Indonesian waters. A photograph of this vessel appears in the 1953-54 to 1960-61 editions.

LANDING SHIPS

6 Ex-U.S. LST "511-1152" Type

TANDJUNG NUSANIE, LST 1 (ex-U.S.S. Lawrence County, LST 887)
TANDJUNG RADJA, LST 2 (ex-U.S.S. Russell County LST 1090)
TELUK BAYUR, LST 870 (ex-U.S.S. LST 616)
TELUK KAU, LST 871 (ex-U.S.S. LST 652)
TELUK LANGSA, LST 869 (ex-U.S.S. Solano County, LST 1128)
TELUK MENADO, LST 872 (ex-U.S.S. LST 657)

Displacement: Dimensions:

1,653 tons standard (4,080 tons full load)
316 (w.l.), 328 (o.a.)×50×14 feet
7—40 mm, AA., 2—20 mm, AA.
G.M. diesels, 2 shafts. B.H.P.; 1,700=11.6 kts. Guns: Machinery: 7—40 mm, AA., 2—20 G.M. diesels, 2 shafts 600 tons 7.200 miles at 10 kts. 2.100 tons 119 (accommodation for Oil fuel:

Radius: Guided weapons:

(accommodation for 266) Complement:

General Former U.S. tank landing ships of the 511-1152 series. Teluk Langsa was transferred to Indonesia by the United States under the Mutual Defense Assistance Program at Seattle, Washington, on 31 Mar. 1960. (Indonesia announced that she was to acquire this ship from the United States on 27 Feb. 1959). Tandjung Nusanle and Tandjung Radja were transferred on 27 Dec. 1960, and Teluk Bayur, Teluk Kau and Teluk Menado on 17 June 1961. General



TELLIK LANGSA

1961, Indonesian Navy, Official

I Japanese Type

TELUK AMBOINA LST 869

2.200 tons standard (4.8 327×50×15 feet 2—85 mm., 4—40 mm. Displacement: standard (4.800 tons full load)

Dimensions:

Guns: diesels. 2 shafts. B.H.P.: 3,000=13·1 kts.

Machinery: Oil fuel: 1.200 tons

4.000 miles at 13·1 kts. Radius: (accommodation for 300) Complement:

Built in Japan. Launched on 17 Mar. 1961 and transferred to the Indonesian Navy in June 1961.

LANDING CRAFT

3 Ex-U.S. LCI Type

MARICH (ex-Zeemeeuw)
PIRU (ex-Zeearend, LCI 420) AMAHAI (ex-Tropenvogel, LCI 467)

Displacement:

Dimensions:

250 tons standard (381 tons full-load)
158×23×7 feet
1—37 mm., 2 Vickers M.G.
G.M. (Super High Speed Diese!). B.H.P.: 1,800=15 kts

Guns; Machinery; Complement:

General General Former United States infantry landing craft, Turned over from the Netherlands East Indies Government on the formation of the Indonesian Navy in 1950, Another photograph appears in the 1951-52 to 1957-58 editions. Pennant Nos. 864, 866 and 868, respectively. Sister ships Baruna (ex-Jisvogel, LCI 948) and Namea (ex-Storm-vogel) LCI 588, were removed from the effective list and used as pilot ship and light ship, it was officially stated in 1961.



AMAHAI

1961, Indonesian Navy, Official

4 Ex-Yugoslavian LCT Type

TELUKWADJO **TELUKWEDA TELUKWOR!** TELUKKATURAI

Displacement:

Dimensions:

110 tons standard (250 tens full load)
166×21½×5½ feet
1—40 mm., 2—20 mm.
HSA Sweuse diesel. 2 shafts, B.H.P.; 375=7 kts. Machinery: Oil fuel-

6 tons 15 Complement:

General
Transferred from Yugoslavia to the Indonesian Navy on 1 Nov. 1958. Pennant
Nos. 862, 860, 861 and 863, respectively.

TRANSPORTS

MOROTAL (ex-Sawega) HALMAHERA (ex-Bau Masepe)

5.614 tons standard (4,830 tons full load) 435½×58×12½ feet 1—3 inch, 4—40 mm., 4—20 mm. B. & W. diesel. B.H.P: 4,600=12 kts. Displacement: Dimensions:

Guns: Machinery: tons Oil fuel:

Complement: 116

General Transferred to the Indonesian Navy on 23 Nov. 1957, Pennant Nos. 921 and 922.



MORATAI

Indonesian Navy, Official

NUSA TELU (ex-Casa Blanca) BANGGAL (ex-Biscava)

Measurement: 750 tons 168×278×71 feet Dimensions:

Dual purpose troop and cargo ships. Renamed in 1961. Pennant Nos. 925, 924.

AUXILIARY PATROL

DKN 905 DKN 906 **DKN 908** DKN 902 DKN 903 **DKN 904 DKN 901**

140 tons 128×19×51 feet Displacement: Dimensions:

4—20 mm. AA. Maybach diesels. 2 shafts. B.H.P.: 3,000=24.5 kts. Machinery:

General

Coastal minesweepers used also as patrol craft and police boats. Projected as a class of ten units 901-906 were built in Germany in 1958-59, three by Lürssen, Vegesack and three by Abeking & Rambussen. Lemwerder. KELABANG

BANGO

General 147-ton, 21-knot patrol craft launched on 22 Aug, 1960 at Surabja. Powered with West German built engines. A sister ship was to be built.

6 "Pat" Class

PAT 03 PAT 04 PAT 06 PAT 02 PAT 05 PAT 01

91 $_8^7$ (pp.), 100 (o.a.)×17×6 feet 2 Caterpillar diesels B.H.P.: 340 Dimensions: Machinery:

6 "Balam" Class

BEKAKA BELATIK BENDALU BARAU

200 tons gross 125 $\frac{1}{4}$ (o.a.) \times 21 $\frac{1}{2}$ \times 6 $\frac{1}{2}$ feet Werkespoor diesel engine. B,H.P.: 400-430=11 kts. Measurement: Dimensions: Machinery:

All launched in 1953. Balam and others were commissioned for service in 1953.

BEO

7 "Bango" Class BETTET

194 tons gross 120 $\frac{1}{2}$ (pp.), $125\frac{1}{4}$ (o.a.) $\times 21\frac{1}{3} \times 6\frac{7}{12}$ feet Werkspoor diesel engine. B.H.P.: 430=11 kts. Measurement: Dimensions:

BIDO

General All launched in 1952. A photograph of Bettet appears in the 1953-54 to 1960-61

editions 7 "Durian" Class

DAMARA DUKU DURIAN DAGONG DATA DUATA DAIK Displacement:

90 tons 78¼×16×6¾ feet Caterpillar diesel, B.H.P.: 190 Dimensions: Machinery:

General All launched in 1952.

BARUT

12 "Alkai" Class

ANTANG ANKANG ANKLOENG AMPIS ALKAI **ALULU** ANDIS **AMPOK** AROKWES ATTAT ALLAP 143 tons (247 tons full load)
124½×18½×5½ feet
1—37 mm. AA. 4 M.G.
Enterprise diesel engine. B.H.P.: 400-450=12 kts. Displacement: Dimensions: Machinery:

Complement: Built in the Netherlands. Ampok and Alkal were shipped to Indonesia on 17 Mar.

1950.

3 Ex-U.S. SC Type BHAYAMKARA 1 BHAYAMKARA II BHAYAMKARA III

116 tons (trials), (148 tons full load) $107\frac{1}{2}$ (w.l.), $110\frac{6}{5}$ (o.a.) $\times 17\times 6\frac{1}{2}$ feet Diesel: B.H.P.: $800=15\cdot 5$ kts. Displacement: Dimensions:

Machinery:

Former United States submarine chasers of the 110 SC type Refitted by Korody Marine Corporation. Operated by the Indonesian Marine Police. A photograph of this type appears in the 1954-55 to 1960-61 editions.

RINDIANI MERABU (ex-Merbaboe)

Displacement: Dimensions: 80 tons $74\frac{1}{2}\times14\frac{1}{2}\times5 \text{ feet}$ Diesel, B.H.P.: 135=10 kts. Machinery: Complement: 20

General Diampea, launched in 1940, is reported to have been renamed (113 tons gross, $130\frac{1}{2} \times 18\frac{1}{4} \times 6\frac{1}{2}$ feet, diesel machinery, B.H.P.: 360=10 kts., crew 10).

OILERS

2 Ex-U.S.S.R. Type

BUNIU

SAMBU

Displacement:

2,170 tons standard (6,170 tons full load) $3501\times491\times201$ feet 2-20 mm. Polar diesel. 1 shaft, B.H.P.: 2,650=10 kts. Dimensions: Guns: Machinery: Oil fuel: 390 tons

Cargo capacity: Complement:

General

Former Russian tanke rs transferred to the Indonesian Navy on 29 June 1959, Pennant Nos. 904 and 903.



SAMBU

1961, Idonesian Navy, Official

TJEPU (ex-Scandus, ex-Nordhem)

rdhem)
1,372 tons
1,042 tons gross
226½×34×14¼ feet
Paper diesel | shaft, B.H.P.: 850=11 kts. Displacement: Measurement: Dimensions:

Machinery:

Built in Sweden in 1949. Acquired in 1951. Pennant No. 901.

PLADIU

Displacement: Dimensions:

Guns:

1,412 tons standard (4,062 tons full load) $294\frac{1}{2}\times42\frac{1}{6}\times15\frac{1}{2}$ feet 2—20 mm. Compound engines. I.H.P.: 1,700=10 kts. 449 tons Oil fuel:

3,132 tons 70 Cargo capacity:

Complement: General

Purchased from Singapore in 1958. Pennant No. 902.

LIGHTHOUSE TENDER

BIDUK

1,250 tons standard 213 $\frac{1}{4}$ (o.a.) \times 39 $\frac{1}{2}\times$ 11 $\frac{1}{2}$ feet Displacement: Dimensions:

Machinery: 1 Triple expansion engine, I:H.P.: 1,600=12 kts

Complement:

Lighthouse Tender, Cable Layer, and multi-purpose naval auxiliary. Built by J. & K. Smit. Kinderijk. Launched on 30 Oct. 1951. Completed on 30 July 1952. A photograph of this ship appears in the 1953-54 to 1960-61 editions.

SALVAGE VESSEL

TRITON (ex-Mutsunoura Maru)

Displacement: 384 tons Measurement: Dimensions:

383 tons gross
182½×30×15 feet
Triple expansion reciprocating I.H.P.: 700=7 kts. Machinery: Complement:

Former Japanese vessel renamed. Launched in 1941. Pennant No. 926.

TUGS

RAKATA (ex-U.S.S. Menominee, ATF 73)

1.235 tons standard (1.675 tons full load) 195 (w.l.), 205 (o.a.) \times 38 $\frac{1}{2}\times$ 15 $\frac{1}{2}$ (max.) feet 1—3 inch, 4—40 mm, AA., 2—20 mm, AA. 4 sets of diesels with electric drive, B.H.P.: 3,000= 16.5 kts. Displacement: Dimensions: Guns: Machinery:

85

Complement:

Former American fleet ocean tug of the "Apache" class, Launched on 14 Feb. 1942. Transferred from the United States Navy to the Indonesian Navy at San Diego in Mar. 1961. Pennant No. 928.

LAMPO BATANG

Displacement: 250 tons 292 (o.a.), 862 (pp.)×231×111 feet 2 sets diesels. B.H.P.: 1,200=11 kts. 18 tons 1,000 miles at 11 kts. Dimensions: Machinery:

Oil fuel: Radius:

Complement:

General

Ocean tug. Built in Japan. Launched in April 1961. Delivered in Nov. 1961, Pennant No. 934.

GANDENG Measurement:

RROMO

610 tons gross Speed=7.5 kts. Machinery: General Launched in 1940. Reported to have been given a new Indonesian name.

TAMBORA

150 tons 713 (w.l.), 79 (o.a.)×213×93 feet MAN diesel. 2 shafts B.H.P.; 600=10·5 kts. Displacement: Dimensions:

Machinery: Oil fuel: Radius: 9 tons 690 miles at 10.5 kts.

Complement:

General Harbour tugs. Busht in Japan. Lausched in June 1961. Delivered in Aug. 1961. Pennant Nos. 936 and 935.

IRAQ

SUBMARINE CHASERS

3 Ex-U.S.S.R. "S.O.I." Type

Displacement:

215 tons light, 220 tons normal
138 (o.a.)×20×7 (mean), 10 (max.) feet
4—25 mm. AA,
4 five-barrelled 9·5 inch (240 mm.) ahead-throwing Dimensions: Guns: A/S weapons:

rocket launchers
3 diesels, B.H.P.: 3,500=25 kts. Machinery:

General Former Soviet submarine chasers of the "S.O.I." class delivered by the U.S.S.R. to Iraq in 1962.

MOTOR TORPEDO BOATS

12 Ex-U.S.S.R. "P 6" Type

50 tons 82×20×6 feet 4—13 mm. AA. M.G. 2—21 inch Displacement: Dimensions: Guns: Tubes: General Machinery: Speed=40 kts.

Presented by the U.S.S.R. A total of twelve "P-6" class motor torpedo boats have been delivered by the U.S.S.R. to Iraq, of which two were received in 1959, four in Nov. 1960, and six in Jan. 1961. Some remain non-operational.

Six small patrol boats are also reported to have been delivered by the U.S.S.R.

PATROL BOATS

No. 1 No. 2

Displacement: Dimensions:

67 tons
100×17×3 feet (mean)
1—3·7 inch howitzer, 2—3 inch mortars, 4 M.G.
2 Thornycroft diesels. 2 shafts, B.H.P.: 280=12 kts. Guns:

General

Protected by bullet-proof plating. All built by John 1. Thornycroft & Co. Ltd., Woolston, Southampton. All launched, completed and delivered in 1937. Local Boats Eight patrol boats of 36 feet in length with a diesel of 125 B.H.P. and four 21 ft. pilot despatch launches with a diesel of 40 B.H.P. were built by John I. Thornycroft & Co. for the Iraqi Ports Administration.



No. 1

John I. Thornycroft & Co. Ltd.,

No. 4

LIGHTHOUSE TENDER

FAISAL I (ex-Sans Peur, ex-Restless)

1,025 tons 186×29½×14½ feet Displacement: Dimensions: Machinery:

Triple expansion. 2 shafts. 1.H.P.: 850=13 kts. 1 oil-fired Boilers:

Former Royal Yacht, Designed by Messrs, G. L. Watson Ltd. Built by John Brown & Co. Ltd., Clydebank, Launched in 1923. A photograph appears in the 1937 to 1959. 60 editions.

PRESIDENTIAL YACHT

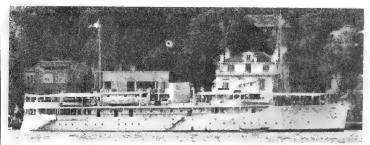
AL THAWRA (ex-Melike Aliye)

Displacement:

746 tons
Diesels. 2 shafts. S.H.P.: 1,800=14 kts. Machinery:

General

This ship was acquired for use as the Royal Yacht before the assassination of King Faisal II in 1958, after which she was renamed Al Thawra (The Revolution) instead of Malike Aliye (Queen Aliyah).



AL THAWRA

Machinery:

Boilers:

Added 1966, Aldo Fraccaroli

ALARM (ex-St. Ewe)

Displacement: Dimensions:

570 tons standard (820 tons full load) $135\times30\times14^{\frac{1}{2}}$ feet Triple expansion, 1 shaft. I.H.P.: 1,200=12 kts.

2 oil-fired

Former British "Rescue" type tug of the "Saint" class, Built by Murdock & Murray, Launched in 1919.

TUG

IRAN (PERSIA)

Chief of Staff, Imperial Iranian Navy: Vice-Admiral T. Rasa'i,

Naval, Military and Air Attaché in London: Colonel G. H. Aghakhaniafshar.

Naval, Military and Air Attaché in Washington: Lieutenant Colonel Abbas Eshraghi.

Launched

Laid down

FRIGATES

I Ex-British "Loch" Type 1,650 tons standard (2,160 tons Displacement:

Dimensions: Guns: Machinery:

1,650 tons standard (2,160 tons full load)
309×38½×14½ (max.) feet
2—4 inch, 4—40 mm, AA,
Triple expansion. 2 shafts. 1.H.P.:
5,500=19·5 kts.
2 Admiralty 3-drum type
725 tons
9,500 miles at 12 kts.

Boilers: Oil fuel:

Radius: Complement:

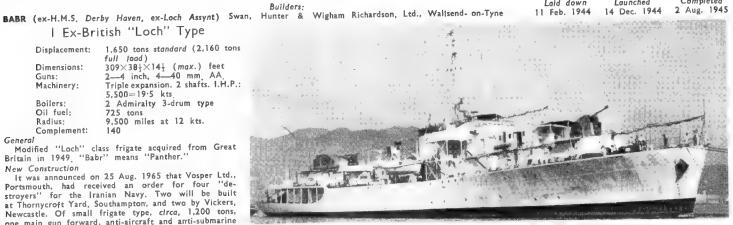
General

General
Modified "Loch" class frigate acquired from Great
Britain in 1949, "Babr" means "Panther."

Britain in 1949. "Babr" means "Panther."

New Construction

It was announced on 25 Aug. 1965 that Vosper Ltd.,
Portsmouth, had received an order for four "destroyers" for the Iranian Navy. Two will be built at Thornycroft Yard, Southampton, and two by Vickers,
Newcastle. Of small frigate type, clrca, 1,200 tons,
one main gun forward, anti-aircraft and anti-submarine
weapons, high speed from Bristol Siddeley gas turbines,
diesels for cruising.



BABR

Added 1966, courtesy Dr. Giorgio Arra

2 U.S. PF Type

BAYANDOR F 25 (ex-PF 103) **NAGHDI** F 26 (ex-PF 104)

Displacement:

900 tons standard (1,135 tons full load)

Dimensions:

Guns: Machinery: full load)
275 (o.a.)>33×10 feet
2-3 inch, 2-40 mm.
F.M. diesels. B.H.P.: 6,000=20

Kts.
Complement: 140
General
Built by the Levingston Shipbuilding Co., Orange,
Texas, for transfer from the U.S. to Iran under MAP.
Bayandor was laid down on 20 Aug. 1962 for launch
in July 1963, and Naghdi was laid down on 12 Sep.
1962 for launch in Oct. 1963. Bayandor was transferred to the Iranian Navy on 18 May 1964 at Charleston, S.C. and Naghdi on 22 July 1964.

CORVETTES



BAYANDOR

PALANG

1964, James F. Ryan, Jr.

I Ex-British "Algerine" Type

Escort Minesweeper

Displacement:

Dimensions:

Guns: A/S weapons:

1,040 tons standard (1,235 tons full load)
225 (o.a.)×35½×13 feet
2—4 inch, 4—40 mm, AA.
2 D.C.T.
Triple expansion. 2 shafts, I.H.P.;
2,000=16.5 kts.

Machinery:

Boilers: Oil fuel:

2 of 3-drum type 270 tons 5,000 miles at 10 kts, 85 Radius:

Complement:

General General
Former "Algerine" class ocean minesweeper and escort
vessel acquired from Great Britain in 1949. "Palang"
means "Tiger."

PALANG (ex-H.M.S. Flv)

Builders Lobnitz & Co. Ltd., Renfrew Laid down 6 Oct. 1941

Launched 1 June 1942

Combleted 20 Oct 1942

Completed



1966. Official

MINESWEEPERS COASTAL

KARKAS (ex-U.S.S. MSC 292) SHAHBAZ (ex-U.S.S. MSC 275)

SHAHROKH (ex-U.S.S. MSC 276) SOMORGH (ex-U.S.S. MSC 291)

Displacement: Dimensions:

Guns:

Machinery: Oil fuel:

320 tons light (378 tons full load)
138 (pp.), 145½ (o.a.)×28×8½ feet
1—20 mm.
2 G. M. diesels, 2 shafts. B.H.P.: 890=12·8 kts.
27 tons

Radius: Complement:

2,400 miles at 11 kts. 40 (4 offices, 2 midshipmen, 34 men)

General
Built by Bellingham Shipyards Co. (Shahbaz and Shakrokh), Petersen Builders Inc.
(Karkas) and Taccma Boatbuilding Co., (Slmorgh). Of wooden construction.
Launched in 1958-61 and transported from U.S. to Iran under MAP"in 1959-62.
"Shahbaz means Eagle and Shahrokh" means Bird of Prey.



1966, Official

PATROL BOATS

KEYVAN

MAHAN

MEHRAN

TIRAN

Displacement: Dimensions: Guns: A/S weapons: Machinery: Radius:

Complement:

85 tons standard (107 tons full load) 90 (pp.), 95 (o.a.) $\times 20\frac{1}{6}\times 6\frac{1}{4}$ (max.) feet 1—40 mm. AA. 8—7·2 inch rockets, 8—300 lb. depth charges 4 Cummins diesels. 2 shafts. B.H.P.: 2,200=20 kts. 1,500 miles crusing range

Gmreral
Keyvan, built in U.S. in 1955, was delivered to Iran on 14 Jan. 1956. For service
in the Persian Gulf. Pennant No. MDA 1. Tiran was built by the U.S. Coast Guard
at Curtis Bay, Maryland, and transferred to Iran in 1957. Mahan and Mehran were
delivered to Iran in 1959 under MAP.



KEYVAN

1957, Official

REPAIR SHIP

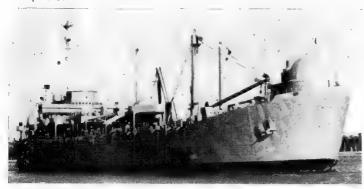
I Ex-U.S. ARL (Ex-LST) Type

SOHRAB (ex-U.S.S. Gordlus, ARL 36, ex-LST 1145)

1.625 tons light (4,100 tons full load)
316 (w.l.), 328 (o.a.)×50×11½ feet
8-40 mm. AA.
G.M. diesels. 2 shafts BH.P.: 1,800=11·6 kts. Displacement:

Machinery:

Former United States repair ship for landing craft. Built by Chicago Bridge & Iron Co., Seneca. III. Laid down on 5 Feb. 1945. Launched on 7 May 1945. Completed on 18 May 1945. Transferred to Iran by the U.S.A. under the Military Aid Programme in Sep. 1961.



SOHRAB

1964. Official

SEAWARD DEFENCE CRAFT

2 Ex-British HDML Type

ASALON (ex-H.M.S. SML 323, ex-HDML 1081)
TAHMADOU FDB 65 (ex-FDB 58, ex-H.M.S. SDML 1389)

Displacement:

46 tons standard (58 tons full load) $72\times16\times5$ feet 8 M.G. Dimensions: Guns:

Diesel. B.H.P.: 320=12 kts. Machinery:

Complement:

General

Former British motor launches of the harbour (seaward) defence type, SML 323 (last employed on survey duties) was transferred from the British Navy to the Iranian Navy at Khorramshahr on 21 June 1956. Employed as despatch boats.



ASALON

1957, Official

COAST GUARD CUTTERS

9 "Azar" Class

DARAKHSH CHAHAB NAVAK

PEYKAN TONDBAD

TOUSAN

SEFIDROUDE

Displacement: Dimensions: Guns: Machinery:

65 tons standard (90 tons full load) 90×16×9 feet M.G. 2 dieseis Speed=22 kts.

TONDAR

TOUFAN

Built by Cant. Nav. I.N.M.A., La Spezia. Transferred to the Coast Guard in 1958. A photograph of Azor appears in the 1955-56 to 1963-64 editions.

MOTOR LAUNCHES

3 "Babolsar" Class

BABOLSAR GORGAN

> Displacement: Dimensions: Guns:

28 to 32 tons $\begin{array}{l} 68\frac{1}{2}\times12\frac{1}{2}\times5\frac{1}{4} \quad \text{feet} \\ 1-47 \quad \text{mm. (Skoda), 1 M.G.} \\ 2 \quad \text{Krupp diesels. 2 shafts. B.H.P.: } 300=14 \quad \text{kts.} \end{array}$ Machinery:

Built in 1935 by Cant. Nav. Riuniti Palermo, Italy. Employed in the Caspian Sea.

6 "Mah" Class

MAHNAVI-VAHEDI MARDJAN

MAHNAVI-HAMRAZ MAHNAVI-TAHERI Displacement: Dimensions:

40×11×3⅔ feet

MORVARID SADAF

Guns: Machinery:

2 General Motors diesels.

General

The two ex-air/sea rescue craft (ex-motor torpedo boats) were handed over to the Coast Guard in 1953.

LANDING CRAFT

3 Ex-U.S. LSIL Type

GHASM (ex-U.S.S. LSIL)
HENGAM (ex-French LSIL 9037, ex-U.S.S. LSIL 768) LARAK (ex-U.S.S. LSIL 710)

Displacement:

210 tons light (393 tons full load)
153 (w.l.), 159 (o.a.)×23½×5½ (max.) feet
4—20 mm. AA,
G.M. diesels. 2 shafts. B.H.P.: 1,800=14·4 kts. Guns: Machinery:

Oil fuel: 80 tons 5,000 miles at 12 kts.

Radius: Complement:

General

Former United States Landing Ships, Infantry, Large, built in 1944. LSIL 768 was ceded to France in 1953 by the United States for service in Indo-China, given back to the U.S.A. in 1957 and then transferred to Iran under the Mutual Defense Assistance Program LSIL 710 was loaned to Iran by the United States in 1959. Pennant Nos. 41 and 42, respectively. Ghasm was added to the fleet in 1965. U.S.S. LCU 1431 was transferred to Iran by U.S. in 1964.



1 ARAK

1963, Official

INSHORE MINESWEEPERS

2 U.S. MSI Type

KAHNAMUIE 301 (ex-MSI 14)

RIAZI 302 (ex-MSI 13)

180 tons standard (235 tons full load) $111\times23\times6$ feet Diesels. B.H.P.: 650=13 kts. 23 (5 officers, 18 men) Displacement: Dimensions: Machinery: Complement:

General

Built in the U.S. by Tacoma Boat Building Co. for delivery to Iran under MAP. Laid down on 22 June 1962 and 1 Feb. 1963, and transferred at Seattle, Washington, on 3 Sep. 1964 and 15 Oct. 1964, respectively.

IMPERIAL VACHT

CHASAVAR

Displacement:

530 tons $176\times25\frac{1}{2}\times10\frac{1}{2}$ feet 2 sets diesels, B.H.P.: 1,300= kts. Dimensions: Machinery:

Built by N.V. Boele's Scheepwerven, Boines, Netherlands. Engined by Gebr. Stork of Hengelo, Launched in 1936. In the Caspian Sea,



CHAHSAVAR

1958, Imperial Iranian Navy, Official

OILER

HENGEH

HORMUZ YO 247

1.250 tons standard (1,700 tons full load) 171 $\frac{1}{4}$ (w.l.), 178 $\frac{1}{2}$ (o.a.)×32 $\frac{1}{4}$ ×14 feet 1 Ansaldo Q 370, 4-cycle diesel Displacement: Dimensions: Machinery:

General

Hormuz was built by Cantiere Castellamare di Stabia. Own oil fuel: 25 tons. Cargo oil capacity 5,000 to 6,000 barrels. Hengeh was added to the Fleet in 1964. A photograph of Hormuz appears in the 1957-58 to 1959-60 editions. Water Tanker
U.S.S. YW 88 was transferred to Iran by U.S. in 1964.

TENDER

SIRRY (ex-M.V.F. 1513)

Length:

90 feet

Purchased from Great Britain in 1949. Rated as a "Fire Extinguishing Boat".

TUG

YADAK BAR (ex-Neyrou)

226 tons Displacement: Dimensions:

81 (pp.), $88\frac{1}{2}$ (o.a.) $\times 22 \times 10$ feet Triple expansion, I.H.P.: 600=11 kts.

Machinery:

Built by Cant. Nav. Riuniti, Ancona. Launched on 9 Dec. 1944. In Persian Gulf.

Administration

Commander-in-Chief of the Israeli Navy: Commodore Shlomo Erel.

ISRAEL

Naval, Military and Air Attaché in London: Brigadier-General Moshe Goren Naval, Military and Air Attaché in Washington: Colonel Ram Ron.

Mercantile Marine

Lloyd's Register of Shipping: 99 vessels of 548,627 tons gross

SUBMARINES

2 Ex-British "T" Class

1,280 tons standard, 1,505 tons surface (1,700 tons submerged) 285½ (o.a.)×26½×14½ feet 6—21 inch (4 bow, 2 stern) Diesels. B.H.P.: 2,500=15:25 kts. surface Displacement: Dimensions: Tubes: Machinery:

Electric motors. H.P.: 2,900=15 kts, submerged

250 tons Oil fuel-

65 officers and ratings Complement:

General Acquired from Great Britain (announced in Nov. 1964). Handed over to Israel after refit in H.M. Dockyard, Portsmouth. Dakar means Shark, Leviathan means Whale.

Builders H.M. DY. Chatham H.M. DY. Devonport LEVIATHAN (ex-H.M.S. Turpin)
DAKAR (ex-H.M.S. Totem)

Laid down 24 May 1943 22 Oct. 1942

Launched 5 Aug. 1944 28 Sep. 1943

Completed 18 Dec. 1944 9 Jan. 1945



1966, Dr. Giorgio Arra

2 Ex-British "S" Class

715 tons standard, 814 tons surface, 1.000 tons submerged 202½ (pp.), 217 (o.a.)×23½×10½ (mean) feet 1—4 inch 6—21 inch Diesels. B.H.P.; 1,900=14·7 kts. Displacement:

Dimensions: Guns:

Tubes Machinery:

surface
Electric motors, H.P.: 1,300=
9 kts. submerged

70 tons 57 officers and ratings Oil fuel: Complement:

General

Former British submarines of the "S" class purchased Former British submarines of the "S" class purchased by Israel in Oct. 1958, Springer was handed over to the Israeli Navy at Portsmouth on 9 Oct. 1958 and renamed Tanin (Crocodile). Both boats were refitted in Great Britain before delivery to Israel in May 1960 (Rahav) and Dec. 1959 (Tanin). They are reported to be very handy craft, capable of making a "crash dive" in 30 seconds, and both are fitted with "Snort" mast and sonar domes. A photograph of Tanin appears in the 1961-62 to 1965-66 editions.

ELATH (ex-H.M.S, Zealous)

YAFFO (ex-H.M.S. Zodiac)

RAHAV (ex-H.M.S. Sanguine)

TANIN (ex-H.M.S. Springer)

71

Builders Cammell Laird & Co. Ltd., Birkenhead

Laid down Launched 15 Feb. 1945 10 Jan. 1944

Completed 13 May 1945

8 May 1944 14 May 1945 2 Aug. 1945 Cammell Laird & Co. Ltd., Birkenhead



1966, Israeli Navy, Official

DESTROYERS

Builders
Cammell Laird & Co.
Ltd., Birkenhead
John I. Thornycroft &
Co., Ltd., Southampton

Laid down 5 May 1942 7 Nov. 1942

Launched 28 Feb. 1944

Completed 9 Oct. 1944

II Mar. 1944 25 Oct. 1944

1.710 tons standard (2.555 tons full load, $362\frac{1}{2}$ (o.a.) $\times 35\frac{1}{2}\times 17$ feet 4—4.5 inch d.p., 6—40 mm. AA.

Dimensions: Guns: Tubes:

2 Ex-British "Z" Class

4—4-5 inch d.p., 6—40 mm. AA. 8—21 inch 4 D.C.T. Parsons geared turbines. 2 shafts. S.H.P.; 40,000=31 kts. 2 Admiralty 3-drum type 580 cons 2,800 miles at 20 kts. 250 officers and ratings A/S weapons: Machinery: Boilers: Oil fuel: Radius: Complement:

General

General Purchased from Great Britain. Transferred to Israel on 15 July in Cardiff Docks. Refitted before going to Israel in 1956. Elath by Harland & Wolff in Langton Dock, Liverpool, Yaffo by Crichtons in Trafalgar Dock, Liverpool. A photograph of Elath appears in the 1958-59 to 1964-65 editions.



YAFFO

Pennant No.

RAHAV

Pennant No.

. 42

1964, Israeli Navy, Official

FRIGATE

HAIFA (ex-lbrahim el Awal, ex-Mohamed All el Kebir, ex-Mendip, ex-Lin Fu, ex-Mendip)

I Ex-Egyptian "Hunt" Class

Displacement: Dimensions:

1,000 tons standard (1,490 tons full load)
273\{ (pp.), 280 (o.a.)\times29\times 7\{\frac{1}{4}\) (mean), 14 (max.) feet
4—4 inch, 2—40 mm. AA., 3—
20 mm. AA.
2 D.C.T.
Parsons geared turbines, 2 shafts.

2 D.C.T.
Parsons geared turbines. 2 shafts.
S.H.P.: 19,000=25 kts.
2, of 3-drum type
280 tons
3,000 miles at 14 kts.
190 officers and ratings A/S weapons: Machinery: Oil fuel: Radius:

Former escort destroyer, later reclassified as anti-aircraft frigate, of the British "Hunt" class, Type 1.

Complement:

Builders Engineers
unter & Wigham The Wallsend Slipway & Enn, Ltd., Wailsend- gineering Co., Ltd., Wallsend Swan, Hunter 8 Richardson, Ltd., on-Tyne

Laid down 10 Aug. 1939 Launched 9 Apr. 1940

Completed 12 Oct. 1940



HAIFA

History
This ship, first named Mendip, served with the British
Navy from Oct. 1940 until May 1948 when she was
transferred to the Chinese Navy and renamed Lin Fu.
She was returned to the British Navy at Hong Kong a
year later and reverted to the name Mendip, but was

1966. Israeli Navy, Official

transferred to the Egyptian Navy in Nov. 1949 and was first renamed Mohamed All el Kebir but was again renamed Ibrahim el Awal in 1951. She was captured from Egypt off Haifa by Israeli forces on 31 Oct. 1956 and renamed Haifa. She was commissioned for service in the Israeli Navy in Jan. 1957.

YARKON 44

PATROL VESSEL

NOGAH (ex-PC 16)

Displacement: Dimensions: Guns: A/S weapons: Oil fuel: Radius:

Machinery:

295 tons standard (450 tons full load)
170 (pp.), 173\(\frac{1}{2}\) (o.a.)\times 23\times 10 (max.) feet
1—4 inch, 1—40 mm. AA., 3—20 mm
4 D.C.T. mm. AA

60 tons 5,000 miles at 9 kts, 2 diesels. 2 shafts. B.H.P.; 1,764=18 kts.

Complement:

General Former United States patrol vessel (submarine chaser) of the steel hulled PC type.



NOGAH

1966, Israeli Navy, Official

TORPEDO BOATS MOTOR

OPHIR

TARSHISH

Displacement: Dimensions: Guns: Torpedoes:

40 tons 70×17×5 feet 1—40 mm, A/ 2—17-7 inch

AA., 2-20 mm. AA

Machinery:

High octane petrol engines. B.H.P.: 4,000=40 kts.

General

Motor Torpedo Boats/Gunboats built for the Israeli Navy by Cantieri Baglieto. Varrazze, Italy, in 1956-57. Pennant Nos. T 150, 151 and 152, respectively.



SHVA

1964, Israeli Navy, Official

AYAH

BAZ

DAYA

PERESS

TAHMASS

YASOOR

Displacement: Dimensions: Guns: Torpedoes:

62 tons standard
85\frac{1}{3} (o.a.) × 20\frac{3}{3} × 5 feet
1—40 mm., 4—20 mm. AA,
2—17·7 inch
2 Napier Deltic diesels. 2 shafts. B.H.P.: 4,600=42 kts,
600 miles at 29 kts.
15 (1 officer, 13 men)

Machinery:

Radius:

Complement:

Built by Chantiers de Meulan, France. Launched in 1950-56. Pennant Nos.: T 200, 201, 202, 203, 204, 205. Photographs appear of T 208 in the 1953-54 to 1957-58 editions, of T 207 in the 1953-54 to 1960-61 editions, and of Peress in the 1961-62 to 1964-65 editions.



TAHMASS

Guns: Tubes: 1965. Israeli Navy, Official

TINSHEMETT

LILITT

SHALDAGG Displacement: Dimensions:

tons stardard 70×19×5 feet 1—40 mm., 2—20 mm. AA. 2—18 inch

3 Packard engines B.H.P.: 4,050=40 kts. 600 miles at 15 kts.

Machinery: Radius: Complement:

Motor torpedo boats purchased in Great Britain. Built by Vosper, Ltd., Portsmouth, England, in 1942: Pennant Nos.: T 209, T 210, and T 212.

COAST GUARD CUTTERS

YARDEN 42

Displacement: Dimensions: Guns: Machinery:

96 tons standard (109 tons full load) 100×20×6 feet 2—20 mm. AA, Diesels. 2 shafts, Speed 22 kts.

Complement:

General

Coastguard cutters. Both built by Yacht & Bootswerft, Burmester Burg, Germany, Yarkon was launched on 25 July 1956 and Yarden (Pennant No. 42) in 1957. A photograph of Yarden appears in the 1961-62 to 1965-66 editions.



YARKON

1966, Israeli Navy, Official

SEAWARD PATROL CRAFT

DROR (ex-M 21)

SAAR (ex-M 35)

TIRTSA

Displacement: Dimensions: Guns: A/S weapons Machinery: Complement: weapons: 46 tons standard (54 tons full load) 72 (o.a.) \times 16 \times 5½ feet 2—20 mm. AA.

D.C

diesels. 2 shafts. B.H.P.: 320=12 kts.

General

Former British harbour defence motor launches. Built in Great Britain n 1943, Disposals The former British Fairmile "B" type motor launch Haportzim was officially deleted

from the Navy list in 1961.

The former United States coast guard cutter Matzpen of the sloop type, formerly employed as a training ship and later as a depot ship, was sold for scrap in 1962.



TIRTSA

Israeli Navy, Official

LANDING CRAFT

LCI Displacement: Dimensions: Machinery:

230 tons standard (387 tons full load) 159×23×53 feet 2 diesels B.H.P.: 1,320=14·4 kts.

General

Former United States vessels of the LCI (Landing Craft Infantry) type.

Displacement:

143 tons standard (309 tons full load) $120 \times 33 \times 4$ feet

Dimensions:

3 diesels. B.H.P.; 675=10 kts.

General General

Reported to be a mixed flotilla of ex-U.S. landing craft, including ex-U.S.S. 640 and ex-U.S.S. 673, Siebel Ferrys, and ex-British vessels of the LCT (6) type.



LCT type

1956, Israeli Navy, Official

LCM

Displacement: Dimensions: Machinery:

22 tons standard (60 tons full load) $50 \times 14 \times 31$ feet $50 \times 14 \times 3\frac{1}{4}$ feet 2 diesels. B.H.P.: 450=11 kts.

Former United States vessels of the LCM (Landing Craft Mechanised) type.



LCM

1966, Israeli Navy, Official

ITALY

Administration

Chief of Naval Staff: Ammiraglio di Squadra Alessandro Michelagnoli

Deputy Chief of Naval Staff: Ammiraglio di Squadra Giuseppe Roselli Lorenzini

Commander-In-Chief Naval Forces: Ammiraglio di Squadra Luciano Sotgiu

Naval Attaché in Washington: Captain Ugo Masetti, It.N.

Naval Attaché in London: Captain Vittorio Patrelli Campagnano, lt.N.

New Construction Programme

2 Guided Missile Cruisers, "Vittorio Veneto" and "Trieste"
2 Guided Missile Destroyers, similar to "Impavido" Class.
2 Frigates, "Alpino" Class
4 Corvettes, "Pietro de Cristofaro" Class

4 Hunter Killer Submarines "Enrico Toto"

l Nuclear Powered Fast Fleet Replenishment Ship of new design

Personnel

1963: 40,000 officers and ratings 1964: 38,000 officers and ratings 1965: 39,000 officers and ratings 1966: 39,000 officers and ratings

Navy Estimates

1963: 138.064.249.000 Lire 1964: 87,375,934,000 Lire 177.633,679,000 Lire 1965: 201,333,181,000 Lire 1966:

Mercantile Marine

Lloyd's Register of Shipping: 1,413 vessels of 5,701,342 tons gross

Silhouettes

Scale: 150 ft.=1 inch



GIUSEPPE GARIBALDI



IMPAVIDO, INTREPIDO



ANDREA DORIA, CAIO DUILIO





IMPETUOSO, INDOMITO



BERGAMINI Class



ALTAIR Class



ALPINO, CARABINIERE

ARTIGLIERE



CENTAURO Class



ALBATROS Class



AVIERE



DE CRISTOFARO Class



APE Class

SUBMARINES

4 "Toti" Class (New Construction) Submarine Killer Type

ATTILIO BAGNOLINI ENRICO DANDOLO

Displacement:

460 tons standard, 524 tons surface (582 tons submerged) $160 \times 15\frac{1}{4} \times 15\frac{1}{4}$ feet

Dimensions:

ENRICO TOTI

Complement:

\$ 514

Machinery:

Tubes:

Attilio Bagnolini was originally projected under the

kts. submerged

1956-57 Programme. Was originally to have been named Delfino, and then Guglielmo Marconi, Enrico Toti, originally projected under the 1958-1959 Programme, and Attilio Bagnolini were both laid down on 15 Apr. 1965 by C.R.D.A., Monfalcone, and expected to be completed in 1967. They will be Italy's first submarines to be constructed since the Second World War, The design of these boats has been recast several times.

ALFREDO CAPPELLINI (ex-U.S.S Capitaine, SS 336). EVANGELISTA TORRICELLI (ex-U.S.S. Lizardfish, SS 373) FRANCESCO MOROSINI (ex-U.S.S. Besugo, SS 321)

3 Ex-U.S. "Balao" Class

Displacement: Dimensions:

Tubes: Machinery: 1,526 tons standard, 1,816 tons surface (2,425 tons submerged)
311½×27×17 feet
10—21 inch (6 bow, 4 stern)
2 2-stroke diesels. B.H.P. 6,500
=20 kts. surface
2 electric motors. H.P.: 2,750=
10 kts, submerged
300 tons
12,000 miles at 10 kts.
85

Oil fuel:

Radius

Complement:

General General
Former United States oceangoing submarines of the
"Balao" class. Lent to Italy by the U.S.A. Lizardfish
was turned over to the Italian Navy by the U.S. Navy
at Pearl Harbour on 9 Jan. 1960. She was originally
to have been renamed Luigi Torelli. The 3-inch gun is Pennant No. \$ 513 \$ 512

Diesel-electric. 1 shaft. 2 diesels. B.H.P.: 1,260=10 kts. surface 1 electric motor. H.P.: 850=14

Builders
Electric Boat Div., General Dynamics Corpn.
Manitowoc S.B. Co., Manitowoc, Wisconsin
Electric Boat Div., General Dynamics Corpn.

Launched 1 Oct. 1944 16 July 1944 27 Feb. 1944 Completed 26 Jan. 1945 30 Dec. 1944 19 June 1944 Transferred 5 Mar. 1966 1 Apr. 1959 1966



EVANGELISTA TORRICELLE

1966, Italian Navy, Official

LEONARDO DA VINCI (ex-U.S.S. Dace, SS 247)

ENRICO TAZZOLI (ex-U.S.S. Barb, SS 220)

2 Ex-U.S. "Gato" Class

Displacement:

Dimensions: Tubes: Machinery:

1,525 tons standard, 1,816 tons surface (2,425 tons submerged) 311½×27×17 feet 10—21 inch (6 bow, 4 stern) 2 G.M. 2-stroke diesels. B.H.P.: 6,500=20 kts. surface 2 electric motors. H.P.: 2,750=10 kts. submerged 250 tons

Oil fuel:

250 tons Radius: Complement: 12.000 miles at 10 kts.

General
Former United States oceangoing submarines of the "Gato" class. Transferred to Italy by the U.S.A. after conversion to guppy snorkel in 1953-54. Modified structure and fairwater. Loan by U.S. was extended for 5 years in 1959.

ears in 1757. A photograph of *Enrico Tazzoll* appears in the 1963-to 1965-66 editions.

Builders Pennant No.

\$ 510

\$ 511

Electric Boat Div. General Dynamics Corpn. Electric Boat Div.

General Dynamics Corpn.

Laid down 22 july 1942 25 Apr. 1943

7 lune 1941

2 Apr. 1942

Launched

8 July 1942

Completed

23 July 1943

31 Jan. 1955

Transferred

15 Dec. 1954



LEONARDO DA VINCI

1966, Italian Novy, Official

PIETRO CALVI (ex-Bario, ex-Uit 7, ex-Bario)

2 "Flutto" Class

Displacement: Dimensions:

800 tons standard, 905 tons surface, (1,107 tons submerged) $216\frac{1}{2}\times23\times13\frac{1}{4}$ feet 4-21 inch

Machinery:

210 × 33×134 reet 4-21 inch 2 MAN diesels. 1 shaft. B.H.P.: 2,700=15 kts, surface, 3 electric motors-12·5 kts. submerged 10,000 miles at 8 kts.

Radius: Complement:

General Sunk by Allied air-raid on 16 Mar. 1945 after having been renamed Uit 7. She was reconstructed with a tear drop bow and modernised during 1957-59, being relaunched on 21 June 1959.

In Mar. 1961 her original name Barlo was changed to Pietro Calvi.

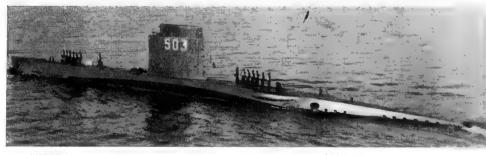
S 503

Builders C.R.D.A., Trieste (1944) C.N. Taranto (1961) Laid down 15 Mar. 1943

Lounched: 23 Jan. 19 1944

Completed: Dec. 1957

Rebuilt 1961



PIETRO CALVI

Added 1964, Captain Aldo Fraccaroli

VORTICE (ex-P.V. 2, ex-Vortice) Displacement:

S 502 781 tons standard, 901 tons surface, 1,095 tons submerged 207½×22½×16 feet 4—21 inch (originally 6—21

Pennant No.

Tubes: Machinery:

4—21 inch (originally 6—21 inch)
2 FIAT diesels, 2 shafts, B.H.P.:
2,400=15 kts. surface, 2 electric motors, H.P.: 1,350=7 kts, submerged 12,500 miles at 8 kts 52

Radius:

Complement: General

Dimensions:

General

One of eight boats of the "Flutto" Class which joined the Royal Italian Navy during the war. She was laid up under the terms of the Peace Treaty. Her subsequent reconditioning was completed at the end of 1952. Disposal

The old submarine Glada of the "Acciaio" class was removed from the effective list on 1 Jan. 1965.

Builders C.R.D.A., Monfalcone

Laid down Jan. 1942 Launched

Combleted



VORTICE

1965, Italian Navy, Official

MISSILE CRUISERS (CG) GUIDED

2 New Construction Improved Types

TRIESTE (ex-Italia) VITTORIO VENETO C 550

8,000 tons standard (8,850 tons Displacement: Dimensions:

full load) see General Length: 511 (pp), 548 (o.a.). Beam: 62¼ Draught: 16½ feet Nine A/B 2408 ASW helicpoters Aircraft:

8-3 inch, 62 cal. AA., 2-4-1 inch (105 mm) triple star rocket launchers Guns-

Guided weapons:

rocket launchers

1 twin launcher forward for
"Terrier" surface-to-air missiles

2 triple for A/S torpedoes
Geared steam turbines. 2 shafts,
S.H.P.: 73,000=32 kts (designed speed)

4 Foster-Wheeler
550

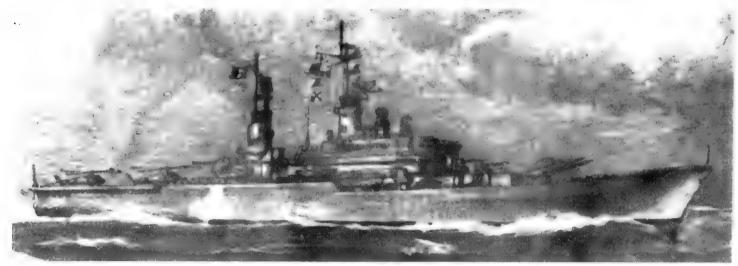
Boilers: Complement: 550

Tubes:

Machinery:

General

General Multi-purpose guided missile armed cruisers and helicopter carriers. Developed from the "Doria" class, but with considerable strengthening of the helicopter squadron and improved facilities for arti-submarine operations. Vittorio Veneto was laid down on 10 June 1965 by Navalmeccanica Castellammare di Stabia, but her design has been recast and she may turn out at 9,000 to 9,500 tons standard displacement. Trieste, of about 8,500 tons standard and 9,500 tons full load displacement will be laid down at the same yard in 1967.



VITTORIO VENETO (artist's impression)

1963, Italian Navy, Official

GUIDED MISSILE **ESCORT** CRUISERS (CG)

2 "Andrea Doria" Class

(officially rated as Incrociatori di Scorta)

Displacement:

6,000 tons standard (6,500 tons full load) Length: $472\frac{1}{2}$ (pp.), $483\frac{1}{4}$ (o.a.) feet. Beam: $56\frac{1}{2}$ feet. Draught: Dimensions:

feet. Be 16 feet

Guns:

16 feet
8—3 inch, 62 cal. AA, (see Gunnery), 2—4-1 (105 mm.) triple star rocket launchers
1 twin launcher forward for "Terrier" surface-to-air missiles
2 triple for 12-inch A/S reroedoes Guided weapons: Tubes:

Aircraft:

2 triple for 12-inch A/S repedoes Four A/B 204B ASW helicopters Geared steam turbines, 2 shafts, S.H.P.: 70,000=31 kts, (designed speed) 4 Foster-Wheeler 500 Machinery:

Boilers: Complement:

Escort cruisers of an entirely new design, extraordin-arily beamy in relation to their length. Enrico Dandolo was the name originally allocated to Andrea Doria.

Roll Damping
Both ships have Gyrofin-Salmoiraghi stabilisers.

Gunnery

The anti-aircraft battery includes eight 3-inch fully automatic weapons of a new pattern, disposed in single turrents, four on each side amidships abreast the funnels and the bridge.

Photographs
A large starboard broadside view a port bow

Laid down 11 May 1958 Pennant No. Builders Launched Completed ANDRE DORIA 27. Feb. 1963 Cantieri del 23 Feb. 1964 553 Tirreno, Riva Trigoso Navalmeccanica CAIO DUILIO 554 16 May 1958 22 Dec. 1962 30 Nov. 1964 Castellammare

di Stabia



ANDREA DORIA

1966, Yasuo Abe

view of Andrea Doria appear in the 1964-65 edition, and a port quarter oblique overhead view showing flight deck appears in the 1965-66 edition.

Helicopter Platform Helicopters operate from a large platform aft measuring $98\frac{1}{2}$ feet by $52\frac{1}{2}$ feet (30 by 16 metres).



CAIO DUILIO

1965, Italian Navy, Official

GUIDED MISSILE LIGHT CRUISER (CG)

GIUSEPPE GARIBALDI

Pennant No.

Builders dell'Adriatico, Trieste

Laid down

Launched

Completed Dec. 1937

Converted Dec. 1957-1962

I Converted "Garibaldi" Class

Displacement: 9,800 tons standard (11,050 tons Dimensions:

9,800 tons standard (11,050 tons full load)
Length: 593 (w.l.), 613½ (o.a.)
Beam: 61¾ (o.a.)
Draught: 17 (mean), 20 (max.)

feet
4—5-3 inch 45 cal. d.p., 8—3
inch, 62 cal AA. (see Gunnery
Four tubes for ballistic missiles;
1 twin launcher for "Terrier" Guided weapons:

I twin launcher for "Terrier" surface-to-air missiles. See Guided Weapons notes below

Armour:

Machinery: Boilers:

Guided Weapons notes below $4\frac{1}{2}$ " belt, $2\frac{1}{4}$ " deck, 4" turrets, 5" conning tower Parsons geared turbines, 2 shafts. S.H.P.: 85,000=31 kts. 6, of 3-drum type 1,700 tons 4.500 miles at 20 kts. 650 Oil fuel: Radius: Complement:

650

General

Guns:

General
Originally a sister ship of the light cruiser Lulgi
of Savoia Duca degli Abruzzi (removed from the effective list in Apr. 1961), she was converted into a
guided missile cruiser. The appearance of the ship
was completely altered with a single large trunked funnel and lattice masts. She was commissioned for operational service in Nov. 1962, and became Flagship
of the Commander-in-Chief.

Guided Weatons

Guided Weapons

The ballistic missile tubes are installed aft in "Y" position, the "Terrier" system being superimposed in "X" position, a deck higher.

Giuseppe Garibaldi launched mock "Terriers" and ballistic missiles off La Spezia in late 1961 and 1962. Her first launches were made in the Caribbean Sea on 8 Nov. 1962 "Terriers" and then with ballistic missiles. missiles

missiles,
Conversion
The conversion of Giuseppe Garibaldi into an AntiSubmarine Warfare Command Ship is under consideration, but a final decision has been postponed until
1967 pending provision of funds.

The new armament includes four 5-3 inch dual purpose guns of a new automatic model disposed in two twin turrets forward, and an anti-aircraft battery of eight 3-inch automatic weapons, also of a new pattern, built by O.T.O. La Spezia, disposed in single turrets, four on each side amidships abreast the funnel and the bridge.

Engineering
On her original trials this ship developed 104,030
S.H.P. and attained a speed of 33.6 kts. During her reconstruction her machinery was completely refitted. Funnel

Early in 1963 the top of the funnel cowl was modified, increasing the height.

Operational

Giuseppi Garibaldi, with the guided missile armed destroyers Impavido and Intrepido form the 4th Naval Division.

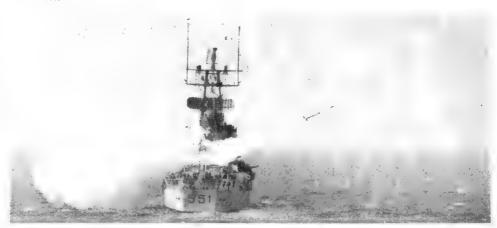
Photographs

Photographs
A starboard brodside view and a port quarter oblique view, both before the funnel was heightened, appear in the 1962-63 edition; and a port quarter view of the ship, firing a Polaris-type fleet ballistic missile from a vertical tube aft, appears in the Addenda (page 450) of the 1963-64 edition (official Italian Navy photograph. A starboard dead brodside surface view appears in the 1964-65 and 1965-66 editions, and a port quarter oblique surface view in the 1965-66 edition.

Drawing

Starboard elevation and plan. Drawn in 1963. Scale. 128 feet=1 inch. Disposal

Her original sister ship, the light cruiser Luigi di Savoia Duca degli Abruzzi, was removed from the effective list in Apr. 1961.

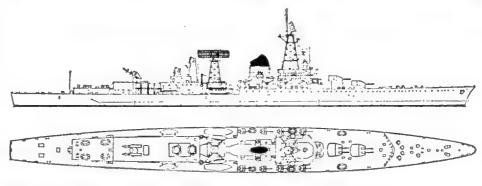


GIUSEPPE GARIBALDI (firing "Terrier" missile)

1966. Captain Aldo Fraccaroll



GIUSEPPE GARIBALDI (showing stern tubes for 4 ballistic missiles) 1963, Captain Aldo Fraccaroli





GUIDED MISSILE DESTROYERS (DDG) ARMED

Pennant No. Builders Ordered Laid down 10 June 1957 Launched 25May 1962 Completed Cantieri del Tirreno Riva, Trigoso Ansaldo IMPAVIDO D 570 lan, 1957 16 Nov. 1963 2 "Impavido" Class INTREPIDO D 571 1959 16 May 1959 21 Oct. 1962 30 Oct. 1964 Leghorn Displacement:

3,201 tons standard (3,941 tons full load)
429½×44½×14½ feet
2—5 inch, 38 cal. AA. (forward); 4—3 inch, 62 cal. AA., 1 single launcher aft for "Tartar" surface-to-air missiles
1 A/S light helicopter
2 triple, for A/S torpedoes
Geared turbines, 2 shafts, S,H.P.: 70,000=34 kts. (see Engineering notes) Dimensions: Guns: Guided weapons:

Aircraft: Tubes: Machinery: notes)

Boilers:

4 340 to 344 (25 officers and 315 to 319 men) Complement:

General

Rated as Caccla Lanciamissili under the generic cate-gory of Navi Scorta della Classe (D). Built under the 1956-57 and 1958-59 new construction programmes, respectively. Both ships are operational.

Anti-Submarine Warfare
The helicopters are of the weapons carrier type (Italian).

Photographs
A large port quarter view of Impavido appears in the 1963-64 edition, and a large starboard bow view of Intrepido in the 1964-65 edition, and a large starboard broadside aerial view of Impavido on full power trials in the 1964-65 and 1965-66 editions.

Engineering
On her preliminary full power trials Impavido, with light displacement, reached a speed of 34.5 kts. (33 kts. at normal load).

Roll Damping
Both ships have stabilisers.

Disposal of light Cruiser

The light cruises Raimondo Montecuccoli, sole survivor of the "Condottieri" class, used as a training ship for midshipmen since 1949, was removed from the effective list in 1964. The official date for scrapping was 1 June 1964.



IMPAVIDO

1964, Italian Navy, Official

2 New Construction Improved "Impavido" Type

ARDITO AUDACE New Construction
It was reported in Apr. 1966 that two new guided missile armed destroyers similar to the "Impavido" class will be built,



IMPAVIDO

1966. Aldo Fracaroli



INTREPIDO

1965, Italian Navy, Official

Combleted

24 June 1943 19 Jan. 1956

DESTROYER LEADERS (ex-Light Cruisers) DL

Pennant No. D 562 D 563 SAN GIORGIO (ex-Pompeo Magno) SAN MARCO (ex-Giulia Germanico)

ulio Germanico) D 563

San Marco: 3,950 tons standard (5,600 tons full load; San Giorgio: 4,450 tons full load, see Conversion 455½ (w.l.), 466½ (o.a.)×47½ ×21 feet

San Marco: 6—5 inch, 38 cal.; 20—40 mm., 56 cal. AA.; San Giorgio: 4—5 inch, 38 cal., 3—3 inch, 62 cal.

San Marco: 1 three-barrelled depth charge mortar, 4 D.C.T., 1 D.C. rack

San Giorgio: 1 three-barrelled mortar; 2 triple A/S torpedo tubes Displacement:

Dimensions:

Guns:

A/S weapons:

Machinery:

tubes
San Marco: Geared steam turbines. 2 shafts, S.H.P.: 110,000

=38 kts.
San Glorgio: 2 Tosi gas turbines,
4 Fiat diesels, Total H.P.: 31,200
=29 kts.
4, of 3-drum type (San Marco)
1,400 tons (San Marco)
3,000 miles at 25 kts.
430 Boilers: Oil fuel: Radius

Complement: 430

General Originally built as Esploratori Oceanici (Ocean Scouts), but re-rated as light cruisers of the Roman Captains (Capatani Romani) class. Guillio Germanico was sunk by the Germans in Sep. 1943 before completion, but was re-floated in 1947. Both ships were converted into fleet destroyers in 1951-56 by Cantieri del Tirreno, Genova and Navalmeccanica Castellammare General

Laid down 23 Sep. 1939 11 May 1940 Builders Cantieri N. Riuniti Ancona Navalmeccanica Castellammare di Stabia di Stabia, San Glorgio being re-commissioned on 1 July 1955 and San Marco on 20 Feb. 1956. Re-rated Exploratori (scouts) in 1957, and Cacciatorpediniere Conduttori (destroyer leaders) in 1958.

Radar
The "quotameter" was removed from the main-top.
Engineering
On trials in 1955 these ships made 40 and 41 knots.

Conversion

Conversion

San Giorgio underwent complete reconstruction at the Naval Dockyard, La Spezia, in 1963-65. The modernisation included her adaptation as a Training Ship for 130 cadets of the Accademia Navale. Changes were made in the armament (she was formerly armed like San Marco) and new machinery fitted, gas turbines and diesels replacing steam turbines and boilers.

Launched

28 Aug. 1941 20 July 1941



SAN MARCO

1964, A. & J. Pavia



SAN GIORGIO

1966, Italian Navy, Official

IMPETUOSO INDOMITO

Pennant No. D 558 D 559

Builders Cantieri del Tirreno, Riva Trigoso Ansaldo, Leghorn (formerly O.T.O.)

DESTROYERS

(DD) Ordered Nov. 1950 Nov. 1950

Laid down 7 May 1952 24 Apr. 1952

Launched 16 Sep. 1956 7 Aug. 1955

Completed 25 Jan. 1958 23 Feb. 1958

2 "Impetuoso" Class

2,755 tons standard (3,800 tons Displacement: Dimensions:

Guns:

2.755 tons standard (3,800 tons full load)
405 (pp.), 418} (o.a.)×43½×
17½ feet
4—5 nch, 38 cal. AA., 16—40
mm., 56 cal. AA., 2—105 mm.
triple star rocket laumchers
2 triple for A/S torpedoes
1 three-barrelled depth charge
mortar, 4 D.C.T., 1 D.C. rack
Geared turbines. 2 shafts. S.H.P.:
60.000=34 kts. (see Engineering)
4 Foster-Wheeler
350 Tubes: A/S weapons: Machinery:

Boilers:

Complement:

Italy's first destroyers to be constructed since the Second World War. Officially rated as Cacciatorpediniere or torpedo boat destroyers.

Engineering
On their sea trials these ships attained a speed of 35 kts. at full load.

Conversion

Conversion and modernisation of these ships is under consideration, but the final decision has been postponed until 1967 pending provision of funds.

Photographs
Other photographs of Impetuoso appear in the 1958-59 to 1962-63 editions, and a starboard dead broadside surface view (silhouette photograph) of Indomito in the 1963-64 to 1965-66 editions.



INDOMITO

1966, Dr. Georgio Arra



IMPETUOSO

1964, A. & J. Pavla

Destroyers—contd.

ARTIGLIERE (ex-U.S.S. Woodworth, DD 460) D 553

2 Ex-U.S. DD Type

(officially rated as Cacciatorpediniere)

Displacement:

1,620 tons standard (2,575 tons

Dimensions:

full load) 348 $\frac{1}{6}$ (o.a.)×35 $\frac{1}{2}$ ×18 feet full load)
348\{ (o.a.)\35\{\frac{1}{2}\times 18 \text{ feet} \]
4—5 inch, 38 cal., 12—40 mm.
56 cal., 6—20 mm., 70 cal.
4 D.C. throwers, 2 D.C. racks
Geared turbines. 2 shafts. S.H.P.:
50,000=31 kts.
4 bids pressure

A/S weapons: Machinery:

Boilers:

Guns:

Oil fuel: Radius: Complement:

4 high pressure 600 tons 6,000 miles at 12 kts. 200 (peace), 250 (war)

General

General
Former United States "Mayo" class destroyer (DD). She is used as motor torpedo boat tender and command ship of motor torpedo boat flotillas.

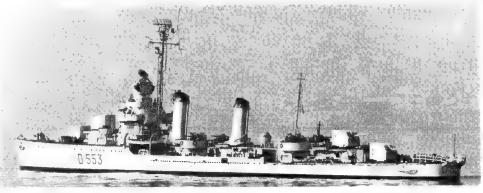
Transfer
Both transferred from the U.S.A. under the Mutual Defense Assistance Program and commissioned on 25 May 1951. Officially turned over to Italy on 11 June 1951. The 5—21 inch torpedo tubes were removed.

Builders Bethlehem, San Francisco

Laid down 13 lan. 1941

Launched 29 Nov. 1941

Complete 30 Apr. 1942



ARTIGLIERE

Added 1966, Aldo Fraccaroli

Appearance

Pennant No.

Artigiere has flat funnels and shielded "X" 5 inch mounting, but Aviere has round funnels and no shield to "X" 5 inch gun mounting, and has extra tier on bridge, see photographs above and below.

AVIERE (ex-U.S.S. Nicholson, DD 442)

Displacement:

1,700 tons standard (2,580 tons

Dimensions:

Guns:

A/S weapons:

1,700 cons standard (2,580 tons full load)
341 (w.l.), 348\{ (o.a.)\times 36\times 18 feet \}
4—5 inch, 38 cal., 12—40 mm. Bofors, 6—20 mm. Oerlikon 4 D.C. throwers, 2 D.C. racks General Electric geared turbines. 2 shafts. S.H.P.: 50,000=31 kts. 4 Babcock & Wilcox 600 tons

Machinery: Boilers:

Oil fuel: Radius: Complement:

600 tons 6,000 miles at 12 kts. 200 (peace), 250 (war)

Former United States "Gleaves" class destroyer (DD). See Transfer and Appearance above.

Pennant No.

Builders Boston Navy Yard

Laid down 1 Nov. 1939

Launched 31 May 1940

Completed 3 June 1941

AVIERE

ALPINO (ex-Circe)

CARABINIERE (ex-Climene)

Disposals
Of the older Italian destroyers Granatiere was removed from the effective list in 1958. Grecale (latterly

1966, Giorgio Arra

Laid down 27 Feb. 1963

9 Jan. 1965

Completed

converted into a command ship) on 1 June 1964, and Carabiniere (latterly rated as Auxiliary Experimental Ship) on 13 Jan. 1965.

Builders Cantiere Navali del Tirreno,

Riva Trigoso Cantiere Navali del Tirreno,

FRIGATES (Fregate)

F 581

2 "Alpino" Class (New Construction)

Displacement:

2,000 tons standard (2,700 tons

Dimensions:

Guns:

2,000 tons standers full load)
full load)
366; ×43×12; feet
6—3 inch, 62 cal. (single, fully automatic); 2—41 inch (100 mm.) rocket launchers

mm.) rocket launchers 1 single-barrelled depth charge

A/S weapons:

2 triple 12 inch (Mk. 32) for A/S torpedoes Tubes:

Aircraft:

Machinery:

General
The original "Circe" class project was modified in 1962, ir, respect of both machinery and armament. The new design is an improved version of that of the "Centauro" class combined with that of the "Bergamini"

2 triple 12 inch (err. 32) for A/S torpedoes
Two A/B 204B ASW helicopters
4 diesels. B.H.P.: 16,800=24
kts. 2 gas turbines. B.H.P.:
15,000. 2 shafts. Total S.H.P.:
31,800=29 kts.
244

Complement:

General

ALPINO (model)

class. They will have similar basic characteristics but a the 1960-61 programme, but their construction has been heavier displacement and increased engine power. Circo cancelled for the time being owing to fiscal consinual Climene were provided for under the 1959-60 produce the construction. The originally allocated names Circo and gramme. Two other ships of the same type, to have been named Perses and Polluce were provided for under spectively, in June 1965.

Builders

Launched

ALDEBARAN (ex-U.S.S. Thornhill, DE 195) ALTAIR (ex-U.S.S. Gandy, DE 764) ANDROMEDA (ex-U.S.S. Wesson, DE 184)

3 Ex-U.S. DE Type. "Altair" Class

Displacement:

1.240 tons standard (1,900 tons

Dimensions:

1,240 tons standard (1,900 tons full load)
306 (o.a.)×36×12 feet
3—3 inch, 50 cal., 6—40 mm.
Bofors AA., 18—20 mm. AA.
1 Hedgehog, 8 D.C.T., 2 D.C.
racks

A/S weapons:

Guns:

Machinery:

racks General Motors diesels. Electric drive, 2 shafts. B.H.P.; 6,000=21 kts, (17.5 kts, sea speed) 300 tors. 11,500 miles at 11 kts.

Oil fuel:

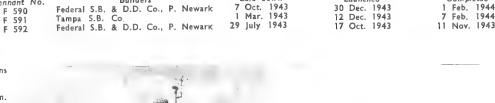
Radius: Complement:

160

Complement: 160

General

Ex-U.S. destroyer escorts of the "Bostwick" class ceded by the U.S.A. under MDAP. Transferred on 10 Jan. 1951. Officially rated as Fregate, but will be rerated as Corvette in the near future. In 1956 a new pentapod foremast was stepped in all three ships in place of the former polemast, A photograph of Altair appears in the 1956-57 to 1962-63 editions,





ALDEBARAN

1963, Captain Aldo Fraccaroli

4 "Centauro" Class

Displacement:

Dimensions: Guns:

1,680 tons standard (2,220 tons full load)
317½ (pp.), 339¼ (o.a.)×38×
11½ feet
4—3 inch, 62 cal. AA.; 4—40 mm. 70 cal. AA., 2—105 mm. triple star rocket launchers (see Conversion notes below).
2—21 inch fixed torpedo launchers
1 three-barrelled depth charge mortar, 2 D.C.T., 1 D.C. rack Geared turbines. 2 shafts. S.H.P.: 22,000=26 kts.
2 Foster Wheeler 400 tons

Tubes: A/S weapons:

Machinery:

Boilers: Oil fuel: Complement: 200

General Cigno (U.S. hull No. DE 1020) and Costore (DE 1031) were built to Italian plans and specifications under the United States off-shore programme for the Italian Navy. All four ships have automatic anti-submarine and medium anti-aircraft armament, and are fitted with United States sonar gear.

Pennant Nos.

In 1960 these four ships, which originally had D pennant numbers, were given F pennant numbers. The originally allocated F pennant number of Canopo was 551.

Conversion
Castore has undergone medium anti-aircraft conversion. The changes include the mounting of three 3-inch 62 cal. single guns, replacing the two 2 barrelled 76/62 and the four 40 mm, 70 cal. AA. The other three ships are to be similarly converted.

Gunnery
The 3 inch guns are in twin gunhouses of a new type with the two barrels in the vertical plane, one superfiring over the other. The new two-barrelled 76/62 gun is Italian designed and built by O.T.O., La Spezia. Its rate of fire is 60 rounds per minute with 3,200 feet per second muzzle velocity.

Photographs

Photographs of Cigno appear in the 1957-58 to 1965-66 editions. Other photographs of Centauro appear in the 1957-58 to 1960-61 and 1963-64 to 1965-66 editions, arm other photographs of Castore appear in the 1961-62 and 1962-63 editions.

Frigates—contd.

Pennant No. F 552 (ex-D 570) F 554 (ex-D 571) F 555 (ex-D 572) F 553 (ex-D 573) Builders
Cantieri Navali di Taranto
Ansaldo, Leghorn
Cantieri Navali di Taranto
Cantieri Navali di Taranto
Cantieri Navali di Taranto
10 Feb. 1954
Cantieri Navali di Taranto Launched 20 Feb. 1955 4 Apr. 1954 20 Mar. 1955 Completed 1 Apr. 1958 5 May 1957 7 Mar. 1957 8 July 1956 14 July



CENTAURO

CANOPO

CASTORE

CENTAURO CIGNO

Added 1966, Aldo Fraccaroll



CASTORE

1966, Wright & Logan

4 "Bergamini" Class

7	Dei gaillilli Class
Displacement:	1,410 tons standard (1,650 tons
	full lcad)
Dimensions:	$298\frac{1}{2}$ (w.l.), $308\frac{1}{4}$ (o.a.) $\times 37\frac{1}{4}$
	×10↓ feet
Guns:	3-3 inch, 62 cal. (single, fully
	automatic)
A/S weapons:	I single-barrelled automatic depth

I single-barrelled automatic depth charge mortar. Type K 113
2 triple for 12 inch A/S torpedoes
1 A/B-47-J3 helicopter
4 Tosi diesel motors (Bergamini and Rizzo). 4 Fiat diesel motors (Fasan and Margattini). 2 shafts.
B.H.P.: 16,000=24-5 kts.
4,000 miles at 18 kts. Tubes: Machinery:

B.H.P.: 16,000=24.5 kts.

General

Light frigates of a new type with diesel motors instead of steam propulsion. Originally they were officially rated as Corvette Veloci tipo 2. (Fast Corvettes, "CV 2" Type). Reported to be excellent ships.

Construction

Carlo Bergamini was originally to have been built by

Construction
Carlo Bergamini was originally to have been built by
Cartieri Navali di Taranto: but the order was cancelled
and she was begun at C.R.D.A. di Trieste Yard in May
1959 (built until launch in San Marco yard. Trieste, but
completed in Monfalcone yard, both of C.R.D.A.).
Anti-submarine Warfare
The new single--barrelled automatic depth charge mortars have a range of 1,000 yards. Rate of fire 15 D.C.
per minute. The 12-inch torpedoes have a life of 13
minutes at 30 kts.
Design

Design

The plans for these ships underwent many amendments. (See photo of first model in 1957-58 edition, official drawing of second projection in the 1958-59 edition, and revised official drawing of third scheme in the 1959-60 and 1960-61 editions.)

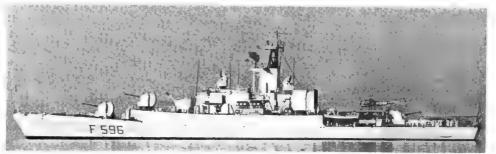
the 1959-60 and 1960-61 editions.)
Engineering
The diesels are coupled to the shafts by reduction gearing and Vulcan joints.
Roli Damping
The ships have two Denny-Brown stabilisers reducing the inclination in heavy seas from 20 to 5 degrees.
Photographs
Other photographs of Luigi Rizzo appear in the 1961-62 and 1962-63 editions. Other photographs of Carlo Bergamini appear in the 1962-63 to 1965-66 editions. Photographs of Carlo Margottini appear in the 1963-64 to 1965-66 editions.

Name	Pen. No.	Builders	Laid down	Launched	Completed
CARLO BERGAMINI CARLO MARGOTTINI UIGI RIZZO VIRGINIO FASAN	F 593 F 595 F 596 F 594	San Marco, C.R.D.A., Trieste Navalmeccanica, Castellammare Navalmeccanica, Castellammare Navalmeccanica, Castellammare	19 May 57 26 May 57 26 May 57 6 Mar. 60	16 June 60 12 June 60 6 Mar. 57 9 Oct. 60	23 June 62 5 May 62 15 Dec. 61 10 Oct. 62



CARLO BERGAMINI

1966, Giorgio Arra



LUIGI RIZZO

1966, Aldo Fraccaroli

Pennant No. LICIO VISINTINI F 546 F 540 PIETRO DE CRISTOFARO SALVATORE TODARO UMBERTO GROSSO F 550 F 541

4 "De Cristofaro" Class

(New Construction)

850 tons standard (940 tons full load) Displacement:

ruli load) 246 (pp.), $263\frac{1}{4}$ (o.a.) $\times 33\frac{2}{3}\times$ 9 feet 2—3 inch, 62 cal. single fully automatic Dimensions:

1 single-barrelled depth charge mortar A/S weapons:

mortar
2 triple for A/S torpedoes
2 diesels.. 2 shafts. B.H.P.:
8,400=23.5 kts. (max.)
4,000 miles at 18 kts. Tubes: Radius:

Complement:

General
The design of the "De Cristofaro" class is an improved version of that of the "Albatros" class. All four units were ordered in 1962.

Photographs A starboard bow oblique view of Pletro de Cristofaro appears in the 1965-66 edition.

CORVETTES

Completed 25 Aug. 1966 19 Dec. 1965 25 Apr. 1966 25 Apr. 1966 Builders Laid down Launched 30 Sep. 1963 30 Apr. 1963 21 Oct. 1962 21 Oct. 1962 30 May 1965 29 May 1965 24 Oct. 1964 12 Dec. 1964 C.R.D.A. Monfalcone Cantiere Navali de Tirreho, Riva Tregoso Cantiere Ansaldo, Leghorn Cantiere Ansaldo, Leghorn



PIETRO DE CRISTOFARO

1966. Italian Navy, Official

AIRONE (ex-PCE 1921) ALBATROS (ex-PCE 1919) ALCIONE (ex-PCE 1920)	Pennant No. F 545 F 543	
ALCIONE (ex-PCE 1920)	F 544	
AQUILA (ex-Lynx, (ex-PCE 1626)	F 542	

4 "Albatros" Class 800 tons standard (960 tons full load) Displacement: 44 (pp.), 249} (o.a.)×31× Dimensions: 244

Guns: A/S weapons:

9 feet
4—40 mm., 70 cal. Bofors AA,
(see Gurmery)
2 Hedgehogs, Mk. II, 2 D.C.T.,
1 D.C. rack (see Tubes)
Fiat diesels, 2 shafts, B.H.P.:
4,500=21 kts. (sea speed 20 kts.)
100 tons Machinery:

Oil fuel: 2,400 miles at 18 kts.

Radius: Complement: 109

General
Airone, Albatros and Alcione were built in Italy.
Four other identical ships were built in Italian yards to
the offshore construction order of the United States
for Mutual Defence Programme general account and
handed over to Denmark.
Gunnery
The true S M P. 3 area 3 inch many

Gunnery
The two S.M.P. 3 type 3-inch guns originally mounted one forward and one aft were temporarily replaced by two 40 mm. guns in 1963. The ultimate armament will include two 3-inch guns of the new O.T.O. Malera model

Navalmeccanica.	Builders Castellammare	di	Stabia
Navalmeccanica,	Castellammare	dí	Stabia
Navalmeccanica,	Castellammare	di	Stabia
Breda Marghera	Yard. Mestre.	Vei	nice

Launched 21 Nov. 1954 18 July 1954 19 Sep. 1954 31 July 1954 Completed 29 Dec. 1955 1 June 1955 23 Oct. 1955 2 Oct. 1956



AOUILA

Transfer Aquila, which was built in Italy (laid down on 25 July 1953), but initially given to the Netherlands, was ceded to the Italian Navy on 18 Oct. 1961 at Den Helder.

1963, Giorgio Arra

Tubes
All four ships will receive two triple ASW tubes.
Photographs
A photograph of Airone appears in the 1959-60 to 1961-62 editions.

17 "Ape" Class

BAIONETTA F 578 BOMBARDA F 549 CHIMERA F 569 CORMORANO F 575 CRISALIDE F 547 DANAIDE F 563 FARFALLA F 548 FLORA F 572

GABBIANO F 571 GRU F 566 IBIS F 561 MINERVA F 562 PELLICANO F 574 SCIMITARRA F 564 SFINGE F 579 SIBILLA F 565 URANIA F 570 Standard (800 to

Displacement: 670 tons standard (800 tons full load) Dimensions:

192\(\frac{1}{4}\) (w.l.), 211\(\frac{1}{4}\) (o.a.)\(\times 28\) \(\times 8\) feet
4-40 mm., 56 cal. in 7 ships.
3-40 mm., 56 cal. in 9 ships,
2-40 mm., 56 cal. in 2 ships, Guns:

2—40 him., 30 cai. iii 2 sings, see Gunnery 2—17·7 inch (see General) 1 Hedgehog, Mk. 15 or Mk. 10 (see notes), 4 D.C.T., 1 D.C. Tubes: A/S weapons:

rack
Fiat diesels. 2 shafts. B.H.P.:
3,500=18.5 kts. (15 kts. actual)
64 tons
2,800 miles at 15 kts. Machinery: Oil fuel:

Radius: Complement:

All launched in 1942-48. Originally fitted for mine-sweeping. The armament of these ships is frequently changed, All have been modified with navigating bridge. Only the eight vessels attached to the Command Train-ing School carry torpedo tubes for training.

Only the eight vessels accaused to the state of training. Gunnery
Seven of this class (Chimera, Cormorano, Danaide, Flora, Pellicano, Sibilla, and Sfinge) carry 4—40 mm. 56 cal. AA. guns. Bombarda and Gabbiano carry 2—40 mm., 56 cal. AA. guns and 2—20 mm. 70 cal. AA. guns. Remainder have 3—40 mm., 56 cal. AA. guns (Cormorano and Danaide have no hedgehog.) Disposals of "Ape" Class Ape, F 567, Fenice, F 577, Folaga, F 576, and Pomona, F 573, were officially deleted from the list in 1965, and Driade in 1966. Photographs

1965, and Driade in 1700. Photographs
Of Gru in the 1955-56 and 1956-57 editions, of Sfinge in the 1956-57 and 1957-58 editions, of Scimitarra in the 1957-58 edition, of Pellicano in the 1960-61, 1961-62 and 1962-63 editions, of Cormorano in the 1963-64, 1964-65 and 1965-66 editions.



CRISALIDE

1966, Italian Navy, Official



DANAIDE (fitted as leader, with deckhouse. No hedgehog)

Disposals of Older Escorts
Of the "Orsa" class, formerly rated as Torpediniere and latterly as Corvette, Orione was removed from the effective list in 1965 and Orsa in 1964.
Of the "Sirio" class, Sogittario was removed from the effective list in 1965 and Cassiopea and Sirio were scrapped in 1960.

1966, Giorgio Arra

Of the "Libra" class, Libra was removed from the effective list in 1963, and Clio was scrapped in 1960. The corvette Alabarda (ex-Ammiraglio Magnaghl, ex-Eritrea, ex-H.M.S. Larne), former British "Algerine" class ocean minesweeper, was deleted from the list in 1945.

OCEAN MINESWEEPERS

4 Ex-U.S. MSO Type "Salmone" Class

SALMONE (ex-MSO 507) M 5430 **SGOMBRO** (ex-MSO 517) M 5432

SQUALO (ex-MSO 518) M 5433 **STORIONE** (ex-MSO 506) M 5431

Displacement: Dimensions: Guns: Machinery: Oil fuel:

665 tons standard (750 tons full load)
165 (w.l.), 173 (o.a.)×35×10 feet
1—40 mm., 56 cal AA
2 diesels, 2 shafts. B.H.P.: 1,600=14 kts.

tons 3.000 miles at 10 kts.

Range: Complement:

General

General
Former U.S. "Agile" class ocean minesweepers with wooden hulls and nonmagnetic equipment. The diesels are of non-magnetic stainless steel alloy. Controllable
pitch propellers. All transferred by the U.S. Navy. Storione, launched on 13 Nov.
1954, was built by Martinolich S.B. Company, San Diego, and transferred on 23 F1b,
1956. Salmone, launched on 19 Feb, 1955 was built by Martinolich S.B. Co., and
transferred from United States at San Diego Calif., on 17 June 1956 under the
terms of the Mutual Defense Assistance Programme, Sgombro and Squalo were
delivered in June 1957.
Photographs **Photographs**

A much larger photograph of Storione appears in the 1957-58 to 1959-60 editions, and a starboard bow view in the 1960-61 to 1965-66 editions.

Disposals Disposals
All sixteen of the general purpose vessels, former British trawler minesweepers,
DR 301 to 316, were officially removed from the effective list on 1 Nov. 1965.



SGOMBRO

1966. Aldo Fraccaroli



SOLIALO

1963, Captain Aldo Fraccaroli

SUPPORT GUNBOATS (Cannoniere d'appoggio) 6 "Alano" Class (Ex-U.S. Landing Ships, Support/Large)

MASTINO (ex-LSSL 62) SEGUGIO (ex-LSSL 64) MOLOSSO (ex-LSSL 63) SPINONE (ex-LSSL 118) ALANO (ex-LSSL 34) BRACCO (ex-LSSL 38)

Displacement: Dimensions: Guns: Machinery:

Oil fuel:

246 tons standard (430 tons full load) 153 (w.l.), $158\frac{1}{2}$ (o.a.) $\times 23\frac{2}{3} \times 5\frac{2}{3}$ feet 5—40 mm, 56 cal.; 4—20 mm., 70 cal.; 4—12·7 mm. 8 Gray Marine diesels: 2 shafts. B.H.P.: $900=12\cdot5$ kts. (Sea speed 10 kts.)

87 tons 8,000 miles at 10 kts.

Radius Complement:

General Transferred from the U.S.A. on 25 July 1951, under the Mutual Defence Assistance Programme. Formerly designated LCI (L) (Landing Craft, Infantry, Large). NATO pennant numbers L 9851 to L 9856, respectively.

A photograph of Alano appears in the 1955-56 to 1957-58 editions, and of Segugio in the 1957-58 to 1962-63 editions.



PATROL VESSELS

I PC Type Rated as Coastal Escort Vessel (Corvetta) VEDETTA (ex-Belay Deress, ex-U.S.S. PC 1616) Pennant No.: F 597

325 tons standard (450 tons full load)
170 (pp.), 174 (o.a.)×23×10 feet
2—40 mm., 56 cal. Bofors AA., 2—20 mm. AA.
4 diesels. 2 shafts. B.H.P.: 3,240=19 kts.
1 Hedgehog, 4 D.C.T., 2 D.C. racks
3,000 miles at 12 kts. Displacement: Dimensions: Guns: Machinery: A/S weapons: Range: Complement:

General

This ship has a chequered history. She was built at Brest, France, as a United States off-shore order under the Mutual Defense Assistance Programme. Laid down on 17 Dec. 1953. Launched on 30 Sep. 1954. Completed on 23 Aug. 1955. She was originally intended for Germany, but a change in U.S. plans resulted in the ship never being delivered, and she was finally given to Ethiopia under the Military Aid Programme Transferred to Ethiopia at Bremerhaven, Germany, by the U.S. Navy in Jan. 1957. Officially taken over from the U.S. flag at Massawa, Ethiopia, in mid-1957. Later, the ship was found to be too sophisticated for Ethiopia, and she was returned to the U.S. Navy. She was then sold to Italy, being transferred to the Italian Navy on 3 Feb 1959, and officially classified as a nave pattuglia (patrol vessel). Air-conditioning equipment is installed. Refitted in La Spezia Navy Yard in 1959. Employed as a Fishery Protection Vessel.



VEDETTA

1963, Italian Navy, Official

MOTOR TORPEDO **BOATS** (Motosiluranti)

MS 443 (ex-843) MS 441 (ex-841) MS 444 (ex-844) MS 453 (ex-853)

Displacement:

Dimensions: Guns: Torpedoes:

Machinery

43 tons standard (51 tons full load)
78×20×6 feet
1.—40 mm., 56 cal., 2 or 3—20 mm., 70 cal.
2.—17.7 inch (no tubes)
3 ASM/185/CRM (Italian) petrol motors. 3 shafts.
B.H.P.: 4,500=30 to 34 kts.

8 tons 1,000 miles at 20 kts. Radius: Complement:

General

Former U.S. PT boats of Higgins type. Refitted in Italy in 1949-53. New radar installed. MS 441 converted into a fast transport for commandos and frogmen. Before reconstruction had 3 Packard 12 cyl. petrol motors of 4.050 B.H.P. Of this class, MS 442 (ex-842), MS 451 (ex-851) and MS 452 (ex-852) were deleted from the list in 1965, and transferred to Customs in 1966, and MS 444 (ex-844) was removed from the effective list in 1966.



MS 443

1963. Giorgio Arra

MS 472 (ex-612) MS 473 (ex-613) MS 474 (ex-614) MS 481 (ex-615)

72 tons standard
92×15×5 feet
4—20 mm. M.G. (see Notes)
2—17·7 inch
Petrol motors. 3 shafts. B.H.P.: 4,500=26 to 33 kts.
600 miles at 16 kts. Displacement: Dimensions: Guns:

Tubes: Machinery:

Radiust

Built in 1942-43 at C.R.D.A. Monfalcone yard; converted as MV (motovedette) with no tubes under the Peace Treaty. Reconverted in 1951-53. MS 472 and MS 473 were refitted as convertible boats in 1960 and MS 474 and MS 481 in 1961. The armament of these interchangeable boats is subject to frequent alterations.

The installation of modern motors increasesd the B.H.P. from 3.450 to 4,500. MS 482 (ex-616), MS 483 (ex-617) and MS 484 (ex-618) were removed from the effective list in 1963, and MS 471 (ex-611) and MS 475 (ex-619) in 1965.



1966, Giorgio Arra

COASTAL MINESWEEPERS

18 "Abete" Class

ABETE M 5501 ACACIA M 5502 BETULLA M 5503 CASTAGNO M 5504 CEDRO M 5505 CILIEGIO M 5506

Displacement: Dimensions: Guns: Machinery:

FAGGIO M 5507 FRASSINO M 5508 GELSO M 5509 LARICE M 5510 MANDORLO (ex-Salice) M 5519 NOCE M 5511 OLMO M 5512 ONTANO M 5513 PINO M 5514 PIOPPO M 5515 PLATANO M 551 QUERCIA M 5517

378 tons standard (405 tons full load)
138 (pp.), 144 (o.a.)×26½×8½ feet
2—20 mm., 70 cal. AA.
2 diesels 2 shafts. B.H.P.: 1,200=14 kts.
25 tons 25 tons 2,500 miles at 10 kts.

Complement:

General
Wooden hulled Dragomine Costieri constructed throughout of materials with the lowest possible magnetic attraction to attain the greatest safety factor when sweeping for magnetic mines, All transferred by the U.S. in 1953-54. Original hull numbers AMS 72-76, 79-82, 88-90, 133-137. NATO numbers above.

Mandorio (ex-U.S.S. MSC 280), transferred at Seattle on 16 Dec. 1960, is of slightly different type, see photograph above, and is used as MHC (minehunter).

A photograph of Cilegio appears in the 1956-57 to 1961-62 editions, and of Frassino in the 1965-66 editions. A port bow view of Mandolo appears in the 1962-63 to 1965-66 editions.

Oil fuel: Radius:



MANDORLO

1966. Italian Navy, Official

19 "Agave" Class

AGAVE M 5531 ALLORO M 5532 EDERA M 5533 GAGGIA M 5534 GELSOMINO M 5535 GIAGGIOLO M 5536

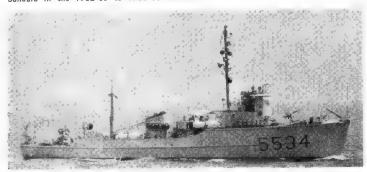
> Displacement: Dimensions: Guns: Machinery: Oil fuel: Radius: Complement:

BAMBU *M 5521 BBANO *M 5522 MANGO *M 5523 MOGANO *M 5524 PALMA *M 5525 ROVERE *M 5526 SANDALO *M 5527 GLICINE M 5537 LOTO M 5338 MIRTO M 5539 TIMO M 5540 TRIFOGLIO M 5541 VISCHIO M 5541

375 tons standard (405 tons full load) 144 (o.a.) $\times 26\frac{1}{2} \times 8\frac{1}{2}$ feet 2—20 mm, 70 cal. AA. 2 diesels. 2 shafts B.H.P.: 1,200=14 kts. 25 tons 25 tons 2,500 miles at 10 kts.

General Non-magnetic minosweepers of composite wooden and alloy construction similar to those transferred from the U.S. but built in Italian yards. *Last 7 were built by C.R.D.A., Monfalcone, and launched in 1956. NATO numbers above.

A photograph of Alloro appears in the 1959-60 to 1961-62 editions, and of Sandalo in the 1962-63 to 1965-66 editions.



GAGGIA

1966. Aldo Fraccaroli



Added 1966, Aldo Fraccaroll PALMA

Coastal Minesweepers—contd.

9 "Azalea" Type (One funnel)

AZALEA (ex-BYMS 2142) M 5401 FIORDALISO (ex-BYMS 2277) M 5405 GARDENIA (ex-BYMS 2150) M 5406 GLADIOLO M 5416

MAGNOLIA (ex-BYMS 2206) M 5408 ORCHIDEA (ex-BYMS 2037) M 5412 PRIMULA (ex-BYMS 2278) M 5413 TULIPANO (ex-BYMS 2194) M 5414 VERBENA (ex-BYMS 2280) M 5415

Displacement:

Dimensions:

290 tons standard (335 tons full load)
136 (o.a.)×24½×6 feet
3—20 mm, 70 cal. AA.
2 General Motors, diesels. B.H.P.: 1,000=13 kts. Guns; Machinery; 19 tons 2,500 miles at 8 kts. Oil fuel: Radius:

Complement:

General Formerly designated DR 401, 402, 403, 411, 404, 417, 405, 406, 407, 416, 408, respectively. Derricks abaft funnel NATO Pennant Numbers above.

Transfers
Of this class Begonia (ex-BYMS 2073) M 5402 and Dalia (ex-BYMS 2141) M 5404 were transferred from the Italian Navy to the Custom House Guard Sea Service in Apr. 1966 and renamed Maresciallo Oltramonte and Brigadiere Avallone, respectively and remaining units of the class have been or are in course of being removed from the active list, as are the six of the "Anemone" class below.



TULIPANO

Official



GLADIOLO

Complement:

1965. Italian Navy, Official

6 "Anemone" Type (Two funnels)

ANEMONE (ex-BYMS 2009) M 5400
BIANCOSPINO (ex-BYMS 2012) M 5403
GERANIO (ex-BYMS 2014) M 5407

MUGHETTO (ex-BYMS 2023) M 5409
NARCISO (ex-BYMS 2024) M 5410
OLEANDRO (ex-BYMS 2027) M 5411

245 toms trials (338 tons full load) 130 (w.l.), 136 (o.a.) \times 24½ \times 8½ (max.) feet 3—20 mm. AA. 2 General Motors, diesels. 2 shafts. B.H.P.: 1,000=14 Displacement: Dimensions: Guns: Machinery: Oil fuel: kts. 2.500 miles at 8 kts. Radius:

General Formerly designated DR 409, 410, 412, 413, 414, 415, respectively. Mainmast derrick between funnels. NATO Pennant Nos. above. Both Types

All the above 17 BYMS (MSCo) type vessels were built in 1942-43 and acquired from the U.S. in July 1947. One 20 mm. AA. gun was added in 1956.

30



NARCISO

1965, Italian Navy, Official

MOTOR GUNBOATS (Motocannoniere)

4 "Freccia" Class. Convertible Type (New Construction)

DARDO (ex-MC 592, ex-493) P 495 FRECCIA (ex-MC 590) P 493 SAETTA (ex-MC 591) P 494 STRALE (ex-MC 593, ex-494) P 496

Displacement:

Dimensions: Guns:

188 tons standard (215 tons full load)
150×23½×5½ feet
As Gunboat: 3—40 mm., 70 cal. or 2—40 mm., 70 cal. and 1—105 mm, rocket launcher
As Fast Minelayer: 1—40 mm, AA. with 8 mines
As Torpedo Boat: 1—40 mm, 70 cal.
As Torpedo Boat: 4—21 inch
2 diesels. B.H.P.: 7,600 and Bristol Siddeley Marine
Proteus gas turbine. S.H.P. 4,250. Total H.P.: 11,850
=40 kts. (sea speed) Tubes: Machinery:

General General Freecia was laid down by Cantiere del Tirreno at Riva Trigosa om 30 Apr. 1963, launched on 9 Jan 1965 and commissioned on 6 July 1965. Saetta was laid down by C.R.D.A., Moisfalcone on 11 June 1963 and launched on 11 Apr. 1965. Dardo was laid down by Taranto Navy Yard on 10 May 1964. Special convertible version designed to carry mines or depth charges. Can be converted in 24 hours to a motor gunboat, to a motor torpdo boat, or to a fast minelayer.



2 "Lampo" Class. Convertible Type

BALENO (ex-MC 492) P 492

LAMPO (ex-MC 491) P 491

Displacement:
Displacement:
Dimensions:

170 tons standard (206 tons full load)
Dimensions:

131\frac{1}{2}\times 21\times 5 feet

As Gunboat: 3—40 mm., 70 cal, or 2—40 mm., 70 cal, and 1 105 mm. rocket launcher

As Torpedo Boat: 1—40 mm., 70 cal.

Tubes:
As Torpedo Boat: 4 17.7 inch

Machinery:
2 Flat diesels, and Metrovick gas turbine, 3 shafts.

General
Total H.P.: 11,700—40 kts,
A new type of convertible gunboats, improved version of the Folgore prototype.

Special convertible version (fast minelayer) carries 8 mines and 1—40 mm. gun.

Both built by Arsenale M.M. Taranto. Lampo was laid down on 4 Jan. 1958, launched on 22 Nov. 1960 and commissioned in July 1963, Baleno was laid down on the same slip on 22 Nov. 1960, launched on 10 May 1964 and commissioned on 16 July 1965. She is being converted to an improved design.



LAMPO

1965, Captain Aldo Fraccaroli

I Convertible Type

FOLGORE (ex-MC 490) P 490

Displacement:

Guns:

Tubes: Machinery:

160 tons standard (190 tons full load) $129\frac{1}{2}\times19\frac{2}{3}\times5 \text{ feet}$
2—40 mm. AA.
4—17-7 inch
4 diesels. 4 shafts, B.H.P.: 10,000=35 kts
(accelerating from 20 kts. to full speed very rapidly)

Authorised in Nov. 1950, launched on 21 Jan. 1954 from C.R.D.A. Monfalcone Yard, and commissioned on 21 July 1955-Two rudders.

Disposal
The old motor gunboat MC 485 (ex- MS 621, ex-Toros), former German S-boat, was officially deleted from the list in 1965.



1963, Captain Aldo Fraccoroli

Motor Gunboats-contd.

I ex-Submarine Chaser (Corvetta)

FULMINE (ex-Sentinella, ex-VAS 470) Pennant No.; P 499 (ex-F 598)

> 300 tons standard (340 tons full load) 154 (pp.), 163 (o.a.)×21½×7 feet 2—40 mm., 56 cal. AA. 2—17-7 inch. Displacement: Dimensions: Guns:

Guns: Torpedoes: A/S weapons: Machinery: Removed
4 diesels. 2 shafts. B.H.P.: 9,000=32 kts. (designed)
Sea speed, 27 kts.
28 tons

Oil fuel-

General
Ordered in 1952 and laid down on 21 June 1954 at C.R.D.A. Monfalcone yard Launched on 14 Nov. 1955. Commissioned on 20 Sep. 1956 as submarine chaser, and rated specifically as a corvette under the generic category of coastal escort vessels. Assigned to motor torpedo boat flotillas as leader. Re-rated as a gunboat, re-named and re-numbered at the end of 1965. Formerly armed with Hedgehog, two depth charge throwers and depth charge rack.



FULMINE

1963, Giorgio Arra

INSHORE MINESWEEPERS

20 NATO "Ham" Type (Dragamine Litoranei) MSI

"Aragosta" Class

ARAGOSTA M 5450 ARSELLA M 5451 ASTICE M 5452 ATTINIA M 5453 CALAMARO M 5454 CONCHIGLIA M 5455 DROMIA M 5456 GAMBERO M 5457 GRANCHIO M 5458 MITILO M 5459 OSTRICA M 5460 PAGURO M 5461 PINNA M 5462

POLIPO (ex-Polto) M 5463 PORPORA M 5464 RICCIO M 5465 SCAMPO M 5466 SEPPIA M 5467 TELLINA M 5468 TOTANO M 5469

Displacement: Guns: Machinery: Oil fuel: Radius: Complement:

119 tons standard (130 tons full load)
106×21×6 feet
1—20 mm. (not mounted)
2 diesels. B.H.P.: 1,000=14 kts. 15 tons 2,000 miles at 9 kts. 14

Similar to the British "Ham" class. All constructed in Italiam yards for the Italian Navy in 1955-57 to the order of NATO. All names of small sea inhabitants. NATO Pennant Nos. above.

A photograph of Riccio appears in the 1958-59 to 1961-62 editions, and of Aragosta in the 1962-63 and 1963-64 editions.



ARSELLA

1964, Giorgio Arra

REPLENISHMENT SHIP

I New Construction

Nuclear Powered Type

AOR

Displacement: Dimensions: Machinery:

circa 10,000 tons circa 500 feet circa 20 kts.

It is reported that a new type of fast replenishment ship is projected, but the exact specifications have not yet been finally decided and the above particulars formulated on operational requirements are very approximate, being based on a tentative design. A Fiat-Ansaldo project. The actual start of construction of the ship depends on the supply of enriched uranium from the U.S.A.

FOLGORE

SURVEYING VESSELS (Navi Idrografiche)

I Ex-British "Flower" Type

STAFFETTA (ex-Elbano, ex-U.S.S. Prudent, PG 96, ex-H.M.S. Privet)

Displacement:

1.020 tons standard (1.280 tons full load)
205 (o.a.)×33×14½ feet
2—20 mm. AA.
Triple expansion. I.H.P.: 2,750=15 kts,
2 cylindrical
250 tons

Dimensions: Guns: Machinery:

Boiler: Oil fuel: 250 tons 5,500 miles at 8 kts.

Radius:

General Former British "Flower" class corvette (later re-rated frigate). Built by Morton Engine & D.D. Co., Montreal, Canada, engined by Port Arthur S.B. Co. Laid down on 14 Aug. 1942. Launched on 4 Dec. 1942. Completed on 16 Aug. 1943. Converted for hydrographic duties and commissioned in 1953. NATO Pennant No.: A 5307.

The oceanographic vessel Bannock (ex-U.S.S. Bannock, ATF 81), former U.S. fleet ocean tug was converted and is manned by the National Research Council and is not on the Navy List; she wears the mercantile flag. (See data in the 1964-65 edition, page 151).



STAFFETTA

1958, Italian Navy, Official

DAINO (ex-B 2, ex-M 802)

Displacement:

605 tons standard (838 tons full load) 224×29½×7½ feet
Triple expansion. 2 shafts. 2,400=14 kts. 2 Schulz-Marine

Dimensions:

Machinery:

Boiler: Oil fuel: 2 Schulz-142 tons 80

Complement:

General
Former German coal burning minesweeper. Acquired on 20 July 1949, when she was classed as "Nave Ausiliaria" (Auxiliary Ship) but subsequently converted to burn oil fuel and classed as "Nave Pattuglia" (Patrol Ship). Reclassified as a minesweeper in 1954 (Pennant No. M 5339). Again reclassified as a coastal escort vessel (Nave Scorta Costelra) on 1 June 1956 and as Corvetta in 1959 with F pennant number 542. Reclassified as a surveying vessel in 1960 and her armament of 1—3·9 inch gun. 3—40 mm, AA. guns and 2 D.C.T. removed. To be removed from the effective list in 1960.

list in 1766.

Of two sister ships, Antilope (ex-B 1, ex-M 328) was removed from the effective list in 1958, and Gazzella became a training ship in 1960 (see later page).

Disposals

The surveying vessel Azio was discarded in 1957. Of the surveying boats, DV 133 and DV 135 were scrapped in Aug. 1953, DV 401, DV 405, DV 406, DV 407 and DV 415 in 1957-58. DV 402, DV 403, DV 404, DV 411, DV 412, DV 413 and DV 414 in 1959-60 and DV 408 and DV 409 in 1965.

All seven boats of the VAS (Vedette-Sommergible) type viz. VAS 491, VAS 492, VAS 493, VAS 494, VAS 495, VAS 496 and VAS 497, were discarded in 1957.



DAINO

1962, Italian Navy, Official

NETLAYERS (Posareti)

2 NATO Type

FILICUDI

Displacement: Dimensions: Guns:

680 tons standard (834 tons full load) 151½ (pp.), $165\frac{1}{2}$ (o.a.) $\times 33\frac{1}{2}\times 10\frac{1}{2}$ feet 1—40 mm., 70 cal. AA.; 4—20 mm., 70 cal. AA. Diesel-electric. H.P.: 1,200=12 kts.

ALICUDI

Built to the order of NATO. Laid down on 22 Apr. 1954 and 19 July 1954, respectively by Ansaldo, Leghorn, launched on 11 July 1954 and 26 Sep. 1954 Pennant nos.: A 5304 and A 5305, respectively.



1960, Italian Navy, Official

SUPPORT SHIP (Nave appogio)

I Ex-U.S. AVP Type

PIETRO CAVEZZALE (ex-U.S.S. Oyster Bay, AVP 28, ex-AGP 6)

1.766 tons standard (2,800 tons full load)
300 (w.l.), 311½ (o.a.)×41×13½ (max.) feet
2—40 mm., 56 cal. AA.
2 sets diesels. 2 shafts, B.H.P.: 6,080=16 kts. Displacement: Dimensions: Guns: Machinery:

400 tons Oil fuel:

Radius: Complement: 10,000 miles at 11 kts.

General

Former United States seaplane tender (previously motor torpedo boat tender) of the "Barnegat" class, built at Lake Washington Shipyard and launched on 7 Sep. 1942. Recommissioned and transferred from the United States Navy to the Italian Navy under the Mutual Defense Assistance Program on 23 Oct. 1957 and renamed. Pennant number A 5301.

The very old support tender Ercole (ex-Ciclope) was removed from the effective list in 1964.



PIETRO CAVEZZALE

1964, Captain Aldo Fraccaroli

RESCUE AND SALVAGE SHIP (Nave Salvataggio)

PROTEO (ex-Perseo, ex-Proteo)

Displacement: Dimensions:

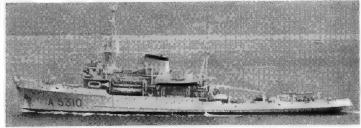
1.865 tons standard (2,147 tons full load) 220 $\frac{1}{2}$ (pp.), 248 (o.a.)×38×15 $\frac{1}{4}$ (mean), 21 (max.)

Removed

2 diesels: B.H.P.: 4,800=16 kts. (see Notes) 7,500 miles at 13 kts. Machinery: Radius:

General Laid

General
Laid down at Cantieri Navali Riuniti, Ancona, in 1943. Suspended in 1944.
Seized by Germans and transferred to Trieste. Construction recommenced at Cantieri
Navali Riuniti, Ancona, in 1949. Diesels at 250 r.p.m. drive a single propeller
through hydraulic couplings and reduction gearing. Formerly mounted ome 3.9 inch
AA. gun and two 20 mm., 70 cal. AA. guns, NATO Pennant No.: A 5310.



PROTEO

Added 1966, Aldo Fraccaroll

REPAIR CRAFT (Motoofficine Costiere)

7 Ex-British LCT(3) Type

MOC 1201 MOC 1202

MOC 1203 MOC 1204

MOC 1205 MOC 1207

MOC 1208

Displacement: Dimensions:

Guns:

350 tons standard (640 tons full load)
192×31×7 feet
2—40 mm., 2—20 mm. (2 ships have 2—40 mm. and
1 ship has 3—20 mm.)
Diesel=8 kts.

Machinery:

Former British landing craft of the LCT (3) type converted to repair craft. MOC 1207 and MOC 1208 are ammunition transports. Now carry new NATO Pennant Nos.: A 5331 to 5338, respectively.



MOC 1201

1955. A. & J. Pavia

TRANSPORTS (Navi Transporto)

STROMBOLI

VESUVIO

Displacement:

2,848 tons light, 4,713 tons standard (6,160 tons full

Dimensions:

Bailares

Machinery:

3,700=12.5 kts.

3 water tube. Oil fuel.

8,150 miles at full load

Radius:

General

Both built by Odero-Terni-Orlando yard, La Spezia. Stromboli was completed in 1948 and Vesuvio in 1954. Stromboli is fitted out as Flagship of the Logistic Support Group of the Fleet. The 3-9 inch gun aft has been removed from Vesuvio, which has been converted into a depot ship or tender for the helicopters carried by Italian warships; she has a hangar abaft the funnel and a flight deck laid on right aft. NATO Pennant Nos.: A 5329 and A 5330, respectively.



VESUVIO (helicopter tender)

1965, Dr. Ing. Luigi Accorsi



STROMBOLI

1963, Captain Aldo Fraccaroli

I Ex-U.S. "Andromeda" Class

ETNA (ex-U.S.S. Whitjey, AKA 91)

Displacement: 7,430 tons light, (14,200 tons full load)
Measurement: 5,145 tons gross, 7,700 tons deadweight
Dimensions: 435 (w.l.), 459\(\frac{1}{2}\) (o.a.)\(\times 63\times 26\)\(\frac{1}{2}\) (max.) feet
Machinery: G.E. geared turbines, 1 shaft, S.H.P.: 6,000=16·5 kts.

Boilers: 2 Combustion Engineering

General General
Former United States attack cargo ship. Built by Moore D.D. Co., Oakland
California, Launched on 22 June 1944, First commissioned on 21 Sep. 1944,
C2—S—B I type. Transferred to Italy at Norfolk, Virginia In Feb. 1962 under
MAP. Rated as Nave trasporto mexzi da sbarco. Permant No.: A 5328.
Italy is to acquire a second AKA type ship from the U.S.N.



1963, Captain Aldo Fraccaroli

I Ex-U.S. AVB Type

ANTEO (ex-U.S.S. Alameda County, AVB 1, ex-LST 32)

Displacement; Dimensions:

1,625 tons light, 2,366 tons beaching (4,080 tons full

Guns: Machinery: Complement:

316 (w.l.), 328 (o.a.)×50×14 (max.) feet 7—40 mm. AA.; 2—20 mm. AA. G.M. diesels. 2 shafts. B.H.P.: 1,700=11·6 kts. (max.) 200

General General
Originally a United States tank landing ship. Built by the Dravo Cooperation,
Neville Island, Pa. Laid down on 17 Feb. 1943, Launched on 22 May 1943.
Completed on 12 July 1943, Reclassified from LST 32 to AVB 1 (Advance Aviation
Base ship) on 28 Sep. 1957. Transferred from the United States Navy to the
Italian Navy in Nov. 1962 for use as a transport ship. Pennamt No.: A 5306.



ANTEO TARANTOLA

1966. A. & I. Pavia

Displacement-Dimensions:

Machinery:

512 tons 157∮×22×6 feet

Tosi diesel. B.H.P.: 380=10.5 kts. Sea speed 9 kts.

TRAINING SHIPS (Navi Scuola)

GAZZELLA (ex-8 3, ex-M 801)

605 tons standard (821 tons full load) 224×29½×7¼ feet
Triple expansion, 2 shafts. 2,400=14 kts. 2 Schulz-Marine Displacement: Dimensions:

Machinery:

Oil fuel: 142 tons

Oil fuel: 142 tons

General

Ex-German coal burning minesweeper, Acquired on 20 July 1949, when she was classed as "Nave Ausiliaria" (Auxiliary Ship) but sebsequently converted to burn oil fuel and classed as "Nave Pattuglia" (Patrol Ship), Reclassified as a minesweeper in 1954 (Pennant No. 5338). Again reclassified as a coastal escort vessel (Nave Costlera) on 1 June 1956 and as Corvetta in 1959 with F pennant number 541, Reclassified as a training ship in 1960, armament being removed, and used for the training of cadets of the Accademia Navale. Pennant No. A 5308. To be removed from the effective list in 1966. Sister ship Antilope (ex.B. 1, ex.M 328) was removed from the effective list in 1958, and sister ship Dalno was reclassified as a surveying vessel in 1960 (see earlier page).



GAZZELLA

1962, Italian Naval, Official

AMERIGO VESPUCCI

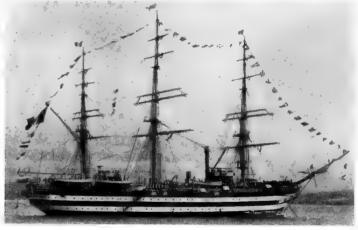
3,543 tons standard (4,146 tons full load) 229 $\frac{1}{2}$ (pp.), 270 (o.a. hull), 330 (o.a. bowsprit) \times 51 \times 22 feet 4 \rightarrow 3 inch, 50 cal.: 1 \rightarrow 20 mm. Two Fiat diesels with electric drive to 2 Marelli motors. 1 shaft. H.P.: 1,900=10·5 kts. 400+150 midshipmen Displacement: Dimensions:

Machinery:

General

Built at Castellammare, Launched on 22 March 1930, Sail area: 22,660 sq. ft.

"ull, masts and yards are of steel, Loud speakers and echo-sounding gear are included in her equipment. Extensively refitted at La Spezia Naval Dockyard in 1964. NATO Pennant No.: A 5312.



AMERICO VESPUCCI

1963, courtesy Godfrey H. Walker, Esq.

PALINURO (ex-Commandant Louis Richard)

Displacement: Measurement:

1.042 tons standard (1,450 tons full load)

Dimensions:

858 tons gross 204 (pp.), 226} (o.a.)×32×18} feet Diesel. 1 shaft. B.H.P.: 375=7 kts.

Machinery:

Barquentine, Ex-French launched in 1920, Purchased in 1950. Rebuilt and commissioned in Italian Navy on 16 July 1955. Sail area: 1,148 sq. ft A 5311.



PALINURO

1963, Captain Aldo Fraccaroli

CORSARO II

STELLA POLARE

General Special yachts for sail training and oceanic navigation. R.O.R.C. class. Corsaro 11 was built by Costaguta Yard. Voltri, in 1959-60. 41 tons. $68\frac{1}{2}\times15\frac{1}{2}\times9\frac{1}{2}$ feet. 1 Mercedes-Benz diesel, 96 H.P. Sail area 2,117 sq. ft. Stella Polare was launched on 15 Sep. 1965 and commissioned on 8 Oct. 1965. 47 tons.

LANDING SHIPS

QUARTO

3 New Construction

Displacement:

764 tons standard (930 to 980 tons full load) $208\frac{1}{3}\!\times\!31\frac{1}{3}\!\times\!4\frac{1}{4}$ feet

A new type of landing ships Quarto was laid down on 19 Mar. 1966 at Taranto Naval Shipyard. The design is intermediate beetween that on an LSM and an LCT. The name of the second vessel will probably be Marsala.

MOTOR TRANSPORTS (Mototrasporti)

13 Ex-German MFP Type

MTC 1008 MTC 1001 MTC 1003 MTC 1005 MTC 1101 MTC 1009 MTC 1010 MTC 1006 MTC 1007

Displacement: Dimensions:

Machinery:

240 tons standard 164×21½×5½ feet 2 or 3—20 or 37 mm. 2 or 3 diesels. B.H.P.: 500—10 kts.

General Moto-Trasporti Costieri, MTC 1001 to 1010 are Italian MZ (Motozattere) type, MTC 1101 to 1104 are ex-German built in Italy, NATO Pennant Nos.: A 5341 and A 5343 to A 5359, respectively, MTC 1002 was removed from the effective list in 1964.



MTC 1003

1965, Italian Navy, Official

20 Ex-U.S. LCM Type

MTM	9901	MTM	9905	MTM	9909	MTM	9913	MTM	9917
MTM	9902	MTM	9906	MTM	9910	MTM	9914	MTM	9918
MTM	9903	MTM	9907	MTM	9911	MTM	9915	MTM	9919
MTM	9904	MTM	9908	MTM	9912	MTM	9916	MTM	9920

Displacement: Dimensions: Guns:

20 tons standard 49½×14½×4½ feet 2—20 mm, AA. Diesels. Speed: 10 kts.

Machinery:

Rated as Moto-Trasporti Medi. Former U.S. landing craft of the LCM type.

28 Ex-U.S. LCVP Type

MTP 97	701 MTP	9706 MT	9711	MTP	9717	MPT	9723
MTP 97	702 MTP	9707 MT	9712	MTP	9718	MTP	9724
MTP 97	703 MTP	9708 MT	9713	MTP	9719	MTP	9727
MTP 97	704 MTP	9709 MT	P 9714	MTP	9720	MTP	9728
MTP 97	705 MTP	9710 MT	P 9715	MTP	9721	MTP	9729
		MT	9 9714	MTD	9722	MTD	9730

Displacement: Dimensions:

8 tons standard 36½×10¾×3 feet 2 M.G.

Guns

Diesels, Speed: 10 kts.

Rated as Moto-Trasporti Piccoli. Former United States landing craft of the LCVP type. MTP 9726 of 10 tons displacement and similar characteristics is of Italian

MTP 9725 was officially removed from the effective list in 1963.

LIGHTHOUSE TENDERS

BUFFOLUTO

Displacement: Dimensions:

930 tons standard 172 $\frac{1}{2}$ (pp.), 184 $\frac{1}{4}$ (o.a.) \times 29 $\frac{1}{2}\times11$ feet 2 triple expansion. I.H.P.: 1,400=10 kts. 2 Thornycroft Machinery: Boilers:

General Launched in 1924. Pennant No.: A 5327, Sister Panigaglia blew up in July 1947,

BAMPINO

Displacement: Dimensions:

350 tons standard (645 tons full load) $158\frac{1}{4}\times24\frac{1}{4}\times13$ feet Triple expansion=7 kts.

Buoy tender. Of netlayer type, Classed as Nave Ausiliarie. Pennant No. A 3509.

3 Ex-British LCT(3) Type

MTF 1301

MTF 1302

Displacement: Dimensions: Guns:

296 tons light (700 tons full load) $192\times31\times7$ feet 1—40 mm., 56 cal. AA., 2—20 mm., 70 cal. AA. Diesel. 1 shaft. Speed=8 kts.

Machinery:

General Converted landing craft of the British LCT (3) type, Lighthouse motor transports (Moto-Trasports Farl). NATO Pennant Nos.: A 5361, A 5362 and A 5363.



MFT 1302

Added 1959, Italian Navy, Official

OILERS (Navi Cisterna per Nafta) I Ex-U.S. T2 Type

STEROPE (ex-Enrico Insom)

Displacement: Dimensions: Machinery:

Boilers:

5,350 tons light (21,800 tons full load) 523 $\frac{1}{2}$ (o.a.)×68×30 $\frac{2}{3}$ feet Turbo-electric. S.H.P.: 6,000=15 kts. 2 Babcock & Wilcox

MTC 1103

eneral
Former United States built oiler of the T 2 type acquired by the Italian Navy
1959 and refitted at La Spezia Navy Yard in April 1959, NATO Pennant No.: 5358.



STEROPE

1960, Erminio Bognasco

DALMAZIA

1,466 tons light, 3,216 tons standard (5,000 tons full Displacement:

Dimensions:

100d) $260\times32\frac{1}{2}\times15\frac{1}{4}$ feet $1-4\cdot7$ inch, 2-20 mm. AA. Triple expansion. 2 shafts, 1.H.P.: 1,450=10 kts. 2 Thornycroft oil-fired 1,800 tons Guns: Machinery:

Boilers: Cargo:

General enerai Built by Quarnaro Yard, Fiume, launched in 1922, Formerly classified as a water rrier. Reclassified as a flee: oiler in 1958. NATO Pennant No.: A 5367 Small Oller
There is also ex-U.S.S. YO 247, a small oiler transferred from the United States to Italy under the Military Aid Programme.



DALMAZIA

Oil fuel:

Italian Navy, Official

WATER CARRIERS (Navi Cisterna per Acqua)

PO

VOLTURNO

1,556 tons light, 3,541 tons standard (6,000 tons full Displacement:

Dimensions:

100a) 2703×383×163 feet 1—4 inch, 35 cal., 2—40 mm., 2—20 mm. (Po) 1—4·7 inch, 45 cal., 2—40 mm., 2—20 mm. AA. (Volturno)

Triple expansion, I.H.P.: 1,700=11.5 kts. 2 oil-fired watertube 226 tons Machinery: Boilers:

General

Po was launched by Cant. Nav. Riuniti, Ancona, on 21 Dec. 1936. Volturno
was built by Cantieri del Tirreno, Riva, Trigoso, in 1936-37, and rebuilding was
completed in 1951. Volturno has a new radar mast (see photo). NATO Pennant
Nos.: A 5365 and A 5366, respectively. Cargo capacity: 2,200 tons.



VOLTURNO

Italian Navy, Official

5 Ex-U.S. YW Type

ISONZO (ex-YW 77) FLEGETONTE (ex-YW 95)

TICINO (ex-YW 79)
TANARO (ex-YW 99)

Displacement:

(ex-YW 92)

436 tons standard (1,470 tons full load) 3—20 mm., 70 cal. AA. 2 diesels. H.P.: 315=8 kts.

Guns: Machinery:

Ex-U.S. Army. NATO Pennant Nos.: A 5369, A 5371, A 5372, A 5376 and A 5377, respectively. Water capacity: 850 tons.

SESIA

Displacement:

Machinery:

General

Built by Adriatico. Launched in 1933, Fitted for minelaying, NATO Pennant No.: A 5375.

Water Carriers—contd.

METAURO

Displacement:

Dimensions:

Guns: Machinery: 592 tons $133\frac{1}{4}\times26\frac{1}{2}\times10\frac{1}{2} \ \ \text{feet} \\ 1-20 \ \ \text{mm.,} \ \ 70 \ \ \text{cal.} \ \ \text{AA.} \\ \text{Tosi diesels, B.H.P.; } 400=8 \ \ \text{kts.}$

Built by C.N. Quarnaro-Fiume. Launched in 1933; NATO Pennant No.: 5373.

ARNO

Displacement: Dimensions:

634 tons 138½×26×10 feet 1—20 mm., 70 cal. AA. 1 Fiat diesel. B.H.P.: 350=8 kts. Gures: Machinery:

Built by Odero-Terni-Orlando, La Spezia, Launched in 1929. NATO Pennant No.: A 5370.

MINCIO

Displacement:

Dimensions:

Gurrs: Machinery: $\begin{array}{l} 645 \;\; tons \\ 138\frac{1}{2}\times26\frac{1}{4}\times10 \;\; feet \\ 1-20 \;\; mm., \;\; 70 \;\; cal. \;\; AA , \\ Tosi \;\; diesels. \;\; B.H.P.; \;\; 350=8 \;\; kts. \end{array}$

General

Built in Venice. Launched in 1929. NATO Pennarrt No.: A 5374.

TIMAVO

Displacement:

265 tons 1 Tosi diesel B.H.P.: 200=8 kts. Machinery:

General

Built by C.O.M.I., Venezia, 1926. Sister ship Vipacco was removed from the effective list in 1961.

FRIGIDO (ex-Fukuju Maru)

Displacement:

398 tons 116½×21 2 M.G. <21½×10 feet Dimensions:

Triple expan
1 cylindrical expansion. I.H.P.: 221=7 kts.

Boilers: General

Built by Osaka: Launched in 1912. Purchased in 1916.

OFANTO

Displacement:

250 tons $105\frac{1}{2} \times 19\frac{2}{3} \times 7\frac{1}{2}$ feet

Dimensions:

Triple expansion, I.H.P.: 165=6 kts.

Boilers:

General Built by S.E.B., Riva Trigoso, 1913-14.

LENO

SIMETO

SPRUGOLA

TRONTO STURA

General Small water carriers of 270, 167, 212, 126 and 110 tons displacement, respectively.

TUGS (Rimorchiatori)

CIRCEO General

Both completed in 1955. Minor tugs for local and general purposes.

AUSONIA

Displacement:

240 tons

General

Both launched in 1948. Coastal tugs for general utility duties.

CICLOPE Displacement:

1.200 tons 157½×32½×13 feet Triple expansion. 1 shaft. I.H.P.: 1,000=8 kts.

General

NATO Pennant Nos.: A 5319 and A 5320, respectively. Titona was launched in 1948. Sister ship Nereo was discarded in 1957.

MISENO

MONTE CRISTO Displacement: 285 tons

General

Former United States Navy harbour tugs.

GAGLIARDO

Displacement: Machinery:

389 tons standard (506 tons full load) 1.H.P.: 1,000 8 kts.

General

Both launched in 1939. NATO Permant No.: A 5322 and A 5323, respectively.

PORTO EMPEDOCLE

Displacement: Machinery:

330 tons standard I.H.P.: 500--11 kts.

Launched in 1934, Employmed as a harbour tug. Armament of 1-3 inch gun removed.

PORTO FOSSONE PORTO PISANO

PORTO RECANATI

PORTO VECCHIO

TINO

Displacement:

Machinery:

226 to 270 tons 881 ~ 22 ~ 10 feet I.H.P.: 600 9 kts.

All launched in 1936-37, except Tino, 1931. Principalyl employed as harbour tugs. Armament of 1-3 inch gun removed. Porto Rosso was deleted from the list in 1965.

ATLETA (ex-LT 152) COLOSSO (ex-LT 214)

FORTE (ex-LT 159) TENACE (ex-LT 154)

Displacement: Dimensions:

525 tons standard (835 tons full load)

Machinery

1424\324\11 feet 2 diesel-electric. H.P.: 690=11 kts.

Army, NATO Pennant Nos.; A 5318, A 5320, A 5321 and A 5324, respectively.

Tugs-contd.

ATLANTE

Displacement: ensions: Machinery:

355 tons 212\dagger \times 23\times 9 feet 1.H.P.: 900=11 kts.

General

Launched in 1928. Sunk by collision in harbour at Gemoa in Jan. 1948, but later lyaged, Armament of 1—3 inch gun removed. NATO Pennant No.: A 5317. salvaged, Armament of I-

VENTIMIGLIA

Displacement: Dimensions: Machinery:

254 tons (Lipari), 230 tons (Ventimiglia) $108\frac{1}{2}\times23\times7\frac{1}{2}$ feet (Lipari) H.P.: 500 (Lipari)=9 kts., 550 (Ventimiglia)=10 kts.

General Lipari was built in 1917. There are also 55 harbour tugs, ferry tugs, lagoon tugs, numbered tugs and minor tugs.

IVORY COAST

PATROL BOATS

I Ex-French VC Type

PERSEVERANCE (ex-VC 9, P 759)

Displacement: Dimensions: Gurs. Machinery: Oil fuel:

75 tons standard (82 tons full load)
104±×17×6 (officially revised figures)
2—20 mm. AA.
2 Mercedes-Benz diesels. 2 shafts, B.H.P.: 2,700=28 kts.
10 tons 1,100 miles at 16.5 kts; 800 miles at 21 kts

Complement:

Radius:

Former French seaward defence motor launch. Built by the Constructions Mecaniques de Normandie, Cherbourg. Completed in 1958. Transferred from France to Ivory Coast in 1963.



PERSEVERANCE

1964, Ivory Coast Armed Forces, Official

I Ex-U.S. SC Type

PATIENCE (ex-P 699, ex-CH 71, ex-U.S. SC -1337) Displacement: Dimensions:

Guns: Machinery: Oil fuel:

Complement:

Radius:

110 tons standard (138 tons full load)
107\(\frac{1}{2}\) (w.l.), 110\(\frac{1}{2}\) (o.a.)\times 17\times 6\(\frac{1}{2}\) feet
1—40 mm. AA., 3—20 mm. AA.
2 Gen. Motors diesels. 2 shafts. B.H.P.: 1,000=15 kts.
15 tons
2,000 miles at 10 kts., 1,150 miles at 15 kts.
25

TAVOLARA

PANARIA

TITANO

ROBUSTO

Former United States wooden submarine chaser. Transferred from th France on 29 Dec. 1943, and from France to Ivory Coast in 1961.



PATIENCE

1964, Ivory Coast Armed Forces, Official

JAMAICA

which became independent within the Commonwealth, on Jamaica,

Aug. 1962, is forming its own Navy.
The Jamaican Government signed an agreement with the United States for the transfer of a small number of coastguard vessels for the new navy.

Great Britain agreed to lend officers to the new navy to train local

PATROL BOATS

personnel. The British Mission included a technical team to survey sites

for the establishement of local naval bases.

3 AVR Type

General Three 63-ft. patrol boats of the AVR type were transferred to the Jamaican Defence Force by the U.S.A. in Feb. 1964.

JAPAN

Administration

Chief of the Maritime Staff, Defence Agency: Admiral Takaichi Itaya.

Commander-in-Chief, Self-Defence Fleet: Vice Admiral Takahide Aioi.

Chief, Administration, Maritime Staff Office: Vice Admiral Hayama Furutachi.

Defence Attaché in London: Captain Goro Yoshimura.

Defence Attaché in Washington: Captain Kiyohide Seki.

New Construction Programmes

1966: 1 destroyer (3,000 tons new type)
1 destroyer (2,000 tons new type)
1 submarine (1,600 tons killer type) 2 coastal minesweepers (340 tons)

1965: 1 destroyer (3,000 tons new type)
1 destroyer (2,000 tons new type)
1 submarine (1,600 tons killer type)
6 auxiliaries and service craft

destroyer (3,000 tons new type) destroyer (2,000 tons new type) submarine (1,600 tons killer type) 1964: submarine chaser (480 tons)

coastal minesweepers (340 tons)

1963: destroyer (3,000 tons new type) destroyer (2,000 tons new type) submarine (1,600 tons killer type) submarine chaser (480 tons)

coastal minesweepers (340 tons)

Five Year Defence Plan

Under the second five-year defence programme (from 1962 to 1966) Japan is building 4 destroyers of 3,000 tons, 7 destroyers of 2,000 tons, 1 training ship of 3,500 tons, 5 submarines of 1,600 tons, 1 minelayer of 2,000 tons and 1 experimental hydroplane.

Personnel

1965: 39,943 (6,210 officers and 28,832 ratings; 4,901 civil) Official figures.

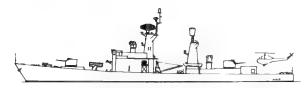
1966: 40,160 (6,300 officers and 28,880 ratings; 4,980 civil)

Mercantile Marine

Lloyd's Register of Shipping: 5,836 vessels of 11,971,157 tons gross

Silhouettes

Scale: 150 ft.=1 inch



MOCHIZUKI, TAKATSUKI



MAKIGUMO, MURAKUMO, YAMAGUMO



AMATSUKAZE



KITAKAMI, OOI



ISUZU MOGAMI



AKIZUKI, TERUZUKI



ARIAKE



IKAZUCHI, INAZUMA



HARUSAME, MURASAME, YUUDACHI



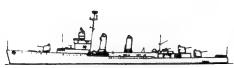
YUUGURE



AKEBONO



AYANAMI Class



ASAKAZE, HATAKAZE



ASAHI, HATSUHI



HARUKAZE, YUKIKAZE



WAKABA



KAYA Class

SUBMARINES

New Construction 2 + 4 "Ooshio" Class

Displacement: Dimensions: Tubes: Machinery:

1,600 tons standard

288½×27×15½ feet

8—21 inch (6 bow, 2 stern)

2 sets Kawasaki MAN diesels. 2
electric motors. 2 shafts. Speed

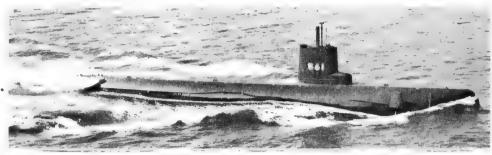
=14 kts. (surface), 16 kts.
(submerged)

Complement:

General

General Ooshio was built under the 1961 fiscal year new construction programme by Shin-Mitsubishi Heavy Industries Co., Kobe. Cost \$5,600,00. A bigger design to obtain improved seaworthiness, a larger torpedo capacity and more comprehensive sonar and electronic devices. She is capable of deep diving, the first submarine of this propensity of all submarines built before or after the Second World War in Japanese yards, Asashio means "Morning Tide" and Ooshio means "Flood Tide" or "Big Tide". Asashio was built under the 1963 programme, and four more are to be built under the Five Year Defence Plan (1962 to 1966).

Laid down 10 Oct. 1964 29 June 1963 Builders Launched Completed Kawasaki Jyuko Co., Kobe Shin Mitsubishi Jyuko Co., Kobe ASASHIO SS 562 SS 561 30 Apr. 1964 OOSHIO 10 Apr. 1965



OOSHIO

1965, courtesy Mitsubishi Heavy Industries Ltd.

4 "Hayashio" Class

Displacement:

Dimensions:

Tubes: Machinery: 750 tons standard (first two), 780 tons (last two), officially revised figures 193½ (o.a.) first two, 200 (σ.a.) last two, 221½ X13½ feet 3—21 inch 2 diesels. 2 shafts. B.H.P.: 1,350 11 kts. (surface), 2 electric motors H.P.: 1,700=14 kts. (submerged) 40

Complement:

Medium submarines of improved type, with more efficient sonar devices, giving them slightly increased displacement. Very handy and successful boats, with a large safety factor, complete air conditioning and good habitability.

Construction
Hayashio and Wakishio were built under the 1959
fiscal year new construction programme and Natsushio
and Fuyushio under the 1961 programme.

Nomenclature
Fuyushlo means "Winter Tide," Hayashlo "Swift
Tide," Natsushlo "Summer Tide," and Wakashlo
"Young Tide."

Photographs
A photograph of Hayashio appears in the 1962-63 to 1964-65 editions, of Natsushio on proving trials at full power in the 1963-64 edition, and of Natsushio as completed in the 1964-65 edition.

Disposal

The former United States submarine of the "Gato" class, Kuroshio, SS 501 (ex-U.S.S. Mingo, SS 261) was officially taken out of commission on 31 Mar.

Nuclear Power Study
The Director of the Japanese Defence Agency stated on 5 May 1955 that Japan was studying the possibility of building a nuclear powered submarine. In the meantime, conventional submarines would be ordered.

	No.	Builders	Laid down	Launched	Completed
FUYUSHIO	SS 524	Kawasaki Jyuko Co., Kobe	6 Dec. 1961	14 Dec. 1962	17 Sep. 1963
HAYASHIO	SS 521	Shin Mitsubishi Jyuko Co., Kobe	6 June 1960	31 July 1961	30 June 1962
NATSUSHIO	SS 523	Shin Mitsubishi Jyuko Co., Kobe	5 Dec. 1961	18 Sep. 1962	29 June 1963
WAKASHIO	SS 522	Kawasaki jyuko Co., Kobe	7 June 1960	28 Aug. 1961	17 Aug. 1962



1964, Japanese Maritime Self-Defence Force, Official



FUYUSHIO

WAKASHIO

1965, Japanese Maritime Self-Defence Force, Official

I "Oyashio" Class

Displacement: Dimensions:

1,130 tons surface (1,420 tons

Machinery:

1,130 tons surface (1,420 tons submerged)
258½×23×15½ feet
4—21 inch. 10 torpedoes
2 diesels. B.H.P.: 2,700=13 kts. (surface)
2 electric motors. S.H.P.: 5,960
=19 kts. (submerged)
5,000 miles at 10 kts.
65

Radius: Complement: General

General
Ordered under the 1956 Programme. The first submarine to be built in a Japanese shippard since the end of the Second World War, Oyashio is the name of a tide stream in the Pacific off Honshu. Delivered to the Japanese Maritime Self-Defence Force on 30 June 1960. First estimated to coast £2,718,000, but this figure was exceeded.

Photographs
An oblique aerial view of Oyashio appears in the 1961-62 to 1965-66 editions.

OYASHIO

Pennant No. SS 511

Builders Kawasaki Jyuko Co., Kobe

Laid down 25 Dec. 1947

Launched 25 May 1959

Completed 30 June 1960



OYASHIO

Japanese Maritime Self-Defence Force, Official

DESTROYERS

4 New Construction Anti-Submarine Type Improved "Moon" Class

Displacement: Dimensions:

3,000 tons (official figure) 426½×44½×14½ feet (approx.) 2—5 inch, 54 cal. d.p. (single)
Octuple Asroc: Dash helicopter;
I four-barrelled rocket launcher;
triple homing torpedo launchers

Machinery:

Guns: A/S weapons:

Boilers:

Geared turbines, 2 shafts. S.H.P.:

60,000=32 kts. 2 Foster-Wheeler

General

General Takutski was provided for under the 1963 fiscal year new construction programme. She is to be equipped with an anti-submarine multiple rocket mounting and a drone anti-submarine helicopter with hangar. Takutsuki means "High Moon". A sister ship is to be built under the 1964 fiscal year new construction programme, and two more are included in the Five Year Defence Plan (1962 to 1966). These ships are variously listed as "DD" and "DDA" Type, The plans provide for two "macks" or combined masts and stacks.

No. MOCHIZUKI DD 165 DD 164 TAKATSUKI

Builders Ishikawajima Jyuko Co., Tokyo Laid down

Launched 7 Jan. 1966

Oct. 1964



TAKATSUKI

1966. Japanese Maritime Self-Defence, Force, Official

7 New Construction

Diesel Type
"Cloud" Class

Displacement: Dimensions:

Gons

2,050 tons (official figure) 374×38\(\frac{3}{4}\times 12\(\frac{2}{3}\) feet 4—3 inch, 50 cal. AA. (two

A/S weapons:

Octuple Asroc; 1 four-barrelled rocket launcher; 2 triple homing torpedo launchers

Machinery:

Mitsui B & W. diesels. 2 shafts, B.H.P.: 26,500=27 kts.

Complement:

General Makigumo was ordered under the 1963 fiscal year new construction programme. Yamagumo was provided for under the 1962 fiscal year new construction programme, Built by Mitsui Shipbuilding & Engineering Co. Ltd., Tamano Works. Makigumo means "Rolling Cloud", and Yamagumo means "Mountain Cloud". A third ship of the type was authorised in the 1964 fiscal year new construction programme, and four more will be built under the Five Year Defence Plan (1962 to 1966). Variously described as "DE" and "DDK" Type. The design shows a lattice mast and two funnels.

MAKIGUMO MURAKUMO YAMAGUMO

DD 114 DD 115 DD 113

Builders Uraga Dock Co., Yokosuka Mitsui Zozen Co., Tamano

10 June 1964

Launched 26 July 1965

27 Feb. 1965 23 Mar. 1964



MAKIGUMO

1966, Japanese Maritime Self-Defence, Force, Official

I New Construction

Guided Missile Armed Type

Displacement:

Dimensions:

Guided weapons:

weapons:

3,050 tons standard (4,000 tons full load)
429½×44×13¼ feet
1 single launcher for "Tartar" guided missiles
4—3 inch. 50 cal. AA. (2 twin)
1 set of short torpedo dropping gear on each side, 2 hedgehogs

AMATSUKAZE

Pennant No. DD 163

Bullders Mitsubishi, Nagasaki

Laid down 29 Nov. 1962

Launched 5 Oct. 1963

Completed 15 Feb. 1965

Machinery: Boilers: Oil fuel:

Complement:

Geared turbines. 2 shafts. S.H.P.: 60,000=33 kts. 2 Ishikawajima Foster Wheeler 900 tons 290 officers and ratings

General
The largest naval vessel completed in Japan since the end of the Second World War, and the first to be armed

with guided missiles. Distinguished by very clean lines, with flush deck and a marked absence of superstructure. Amatsukaze was provided for under the 1960 fiscal year new construction programme. She is equipped with "Tartar" surface-to-air guided missiles supplied from the U.S.A. Designed to carry and operate a helicopter. Amatsukaze means "Heaven Wind". Completed in little over two years, a creditable task for a prototype of the size and complexity.



AMATSUKAZE

1965, Japanese Maritime Self-Defence, Force, Official

Combleted

13 Feb. 1960

29 Feb. 1960

Destroyers—contd.

Pennant No. DD 161

DD 162

2 "Moon" Class (U.S. "Off-shore" Programme)

2,350 tons standard, 2,890 tons Displacement:

normal 387½ (o.a.)×39½×13½ feet 3—5 inch, 54 cal. d.p. (single); 4—3 inch. 50 cal. AA. (two Dimensions: twin)

A/S weapons:

twin)
4—21 inch (quadrupled)
2 hedgehogs, 2 Y-guns, 1 U.S.
model Mk. 108 rocket launcher,
2 D.C.T.
2 sets Mitsubishi-Escher-Weiss
(Akizuki), Westinghouse (Teruzuki) geared turbines. 2 shafts.
S.H.P.: 45,000=32 kts. Machinery:

2 Mitsubishi CE type 330 Boilers:

Tubes



Destroyers of a new design with a long forecastle hull. Received from the United States as part of the 1957 Military Aid Programme, but built in Japanese shipyards under an off-shore procurement agreement. U.S. Navy hull numbers DD 940 and DD 961. They were designed as flotilla leaders to serve as senior officers' ships and are equipped with two homing torpedo



Builders

Mitsubishi Zosen

Co., Nagasaki Shin Mitsubishi

lyuko Co., Kobe

Laid down

31 July 1958

15 Aug. 1958

TERUZUKI

AKIZUKI

TERUZUKI

Added 1966, Skyfotos

launchers, two radar systems and two sonar installations. "Akizuki" means Autumn Moon; "Teruzuki" means Shining Moon.

Photographs A port bow oblique aerial view of Akizuki appears in the 1961-62 to 1965-66 editions.

Launched

26 June 1959

24 June 1959

Anti-Submarine ("A" Type DDK)

7 " Wave " Class

1,700 tons standard (2,500 tons Displacement:

full load) 3573 (w.l.),×35×12 (max.) Dimensions: feet Guns:

feet
6—3 inch, 50 cal. AA. (3 twin)
4—21 inch (quadrupled)
4 fixed A/S homing torpedo launchers
2 U.S. model Mk. 15 Hedgehogs, 2 Y-guns
2 Mitsubishi-Escher-Weiss geared turbines, 2 shafts, 5.H.P.: 35,000=32 kts.
2 Mitsubishi-Nagasaki CF type Tubes: A/S weapons:

Boilers: Mitsubishi-Nagasaki CE type Complement:

Machinery:

Construction Built under the 1955 Programme (Ayanami, Isonami, Shikinami, Uranami); 1957 Programme (Takanami) and 1958 Programme (Oonami, Makinami).

Builders
Mitsubishi Zosen Co., Nagasaki
Shin Mitsubishi Jyuko Co., Kobe
Mitsui Zosen Co., Tamano
Mitsui Zosen Co., Tamano
Kawasaki Jykuo Co., Tokyo
Ishikawajima Jyuko Co., Tokyo
Iino Jyuko Co., Maizuru Laid down
20 Nov. 1956
14 Dec. 1956
24 Dec. 1956
8 Nov. 1958
1 Feb. 1957
20 Mar. 1959 Completed 12 Feb. 1958 14 Mar. 1958 15 Mar. 1958 Pen. No. DD 103 DD 104 AYANAMI ISONAMI SHIKINAMI TAKANAMI URANAMI 1 June 30 Sep. 25 Sep. 8 Aug. 29 Aug. 13 Feb. 1957 DD DD 106 110 105 30 27 Jan. Feb. 29 CONAMI DD 20 Mar. 20 Mar. 1960 29 Aug. 30 Oct. 1960 25 Apr. MAKINAMI 112 1960



OONAMI

Added 1966, Skyfotos

Anti-Submarine

Anti-Submarine
The Hedgehog type depth charge throwers are mounted on turntables before the bridge. Four torpedo loading racks are mounted in pairs abreast the after funnel. Droppers for anti-submarine homing torpedoes are mounted on the quarter deck.

Gunnery
To facilitate ammunition supply the armament was designed to take standard U.S. shell.

Reported to be very successful ships. The largest batch of destroyers of a single design put in hand since the Second World War.

Nomenclature

Nomenclature
Ayanami means "Weave Wave," Isonami means
"Shore Wave," Shikinami means "Spread Wave,"
Takanami means "High Wave," Uranami means "Small
Bay Wave," Oonami means "Billow Wave" and Makinami means "Roller Wave."

Photographs
Photographs of Uranami appear in the 1958-59 to 1960-61 editions, of Isonami and Murasame (Addenda) in the 1959-60 edition, of Oonami (Addenda) in the 1960-61 edition, and of Takanami in the 1961-62 and 1962-63 editions. Another, starboard broadside surface view, of Makinami appears in the 1963-64 to 1965-66 editions.



MAKINAMI

1966, Japanese Maritime Self-Defence Force, Official



TAKANAMI

Added 1966, Wright & Logan

Dimensions:

1,800 tons standard (2,500 tons full load)
360×36×12¼ feet
3—5 inch, 54 cal. d.p.; 4—3 inch, 50 cal. AA. (two twin)
8 short anti-submarine torpedoes, 1 hedgehog, 1 Y-gun, 1 depth charge rack Guns: A/S weapons:

charge rack 2 sets geared turbines. 2 shafts. S.H.P.: 30,000=30 kts. Machinery:

Boilers: Complement:

General Murasame and Yuudachi were built under the 1956 Programme, Harusame under the 1957 Programme. "Harusame" means Spring Rain, "Murasame" means

Shower. Photographs A photograph of Harusame appears in the 1960-61 1962-63 editions, and of Murasame in the 1963-64 1965-66 editions.

2 "Wind" Class

1,700 tons standard (2,340 tons Displacement: full load)

Dimensions:

full load)
347½ (w.l.), 358½ (o.a.)×34½
×12 feet
3—5 inch, 38 cal., d.p.: 8—40
mm. U.S. Bofors AA. (two quad-Guns:

A/S weapons:

mm. U.S. Bofors AA. (two quadruple)
Tubes for short homing torpedoes,
2 hedgehogs, 4 K-guns, 1 depth
charge rack
Harukaze: 2 Mitsubishi-EscherWeiss geared turbines.
Yukikaze: 2 Westinghouse geared Machinery:

turbines

2 shafts. S.H.P.: 30,000=30 kts. Harukaze: 2 Hitachi-Babcock Yukikaze: 2 Combustion Engin-Boilers:

eering 557 tons Oil fuel: 6,000 miles at 18 kts. Radius:

240 Complement:

Complement: ATV

General

"A" Type DD High Speed Escort Vessels. Harukaze
and Yukikaze were authorised by Congress under the
1953 fiscal year programme. First destroyer hulled
vessels built in Japan after the Second World War.

Electric welding was extensively adopted in hull construction; development and usage of weldable high

Destroyers—contd.

HARUSAME	Pennant No. DD 109	Builders Uraga Dock Co.,	Laid down 17 June 58	Launched 18 June 59	Completed 15 Dec. 59
MURASAME	DD 107	Yokosuka Mitsubishi Zosen Co., Nagasaki	17 Dec. 57	31 July 58	28 Feb. 59
YUDACHI	DD 108	Ishakawajima Jyuko Co., Tokyo	16 Dec. 57	29 July 58	25 Mar. 59



YUUDACHI

1966, Japanese Maritime Self-Defence Force, Official

Engineering has Mitsubishi-Escher-Weiss turbines and Murusame Mitsubishi CE type boilers by Mitsubishi, Nagasaki Co. Yuudachi has Ishikawajima type turbines and Ishikawa-jima FW-D type boilers by Ishikawajima Heavy Industry Co.

HARUKAZE	Pennant No. DD 101	Bullders Mitsubishi Zosen Co., Nagasaki	Laid down 15 Dec. 1954	Launched 20 Sep. 1955	Completed 26 Apr. 1956	
YUKIKAZE	DD 102	Shin-Mitsubishi Jyuko Co.,	17 Nov. 1954	20 Aug. 1955	31 July 1956	



YUKIKAZE

tension steel in main hull and light alloy in superstructure were also novel. Nearly all armament was supplied from the U.S.A. under the MSA clause. Harukaze means "Spring Wind," Yukikaze means "Snow Wind." 'Spring Wind
'S Weapons
Tent

Armament was modified in Mar. 1959 when homing

1966. labanese Maritime Self-Defence Force. Official

torpedo tubes were mounted and depth charge equipment correspondingly reduced.

Photographs
Photographs of Harukaze appears in the 1956-57
to 1961-62 editions and in the 1963-64 to 1965-66 editions.

(Ex-U.S. Later "Fletcher" Type) 2 "Twilight" Class

2,050 tons standard (3,040 tons Displacement:

full load) $376\frac{1}{2}$ (o.a.) $\times 39\frac{1}{2} \times 18$ (max.) Dimensions:

376‡ (o.a.) × 39 ½ × 18 (max.) feet Arlake: 3—5 inch, 38 cal.; 10—40 mm. AA. Yugure: 4—5 inch, 38 cal.; 10—40 mm. AA. Arlake: Mk. 108 rocket launcher (Weapon A); 1 set short homitically should be supported by the short homitically should be suppo A/S weapons:

(Weapon A); I set short homing dropping gear on each side, D,C. rack
Yugure: 2 hedgehogs
General Electric geared turbines.
2 shafts, S.H.P.; 60,000=35 kts.
4 Foster Wheeler
300

Machinery: Boilers:

Complement:

General General
Former United States destroyers of the Later
"Fletcher" class DD. Transferred on loan from the U.S.
Navy to the Japanese Maritime Self-Defence Force on
10 Mar. 1959 and towed to Japan for refit, during which
No. 3 5 inch gun was removed, "Ariake" means Dawn
Twilight: "Yuugure" means Evening Dusk.

ARIAKE (ex-U.S.S. Heywood L. Edwards, DD 663) DD 183 YUUGURE (ex-U.S.S. Richard P. Leary, DD 664) DD 184

Builders Boston Navy Yard Boston Navy Yard

Completed Launched 6 Oct. 1943 26 Jan. 1944 6 Oct. 1943 23 Feb. 1944



ARIAKE

Conversion

Conversion

Both ships completed conversion in Mar. 1962 with improved bridges, larger combat information centre, newer radar aerials and tripod masts, No. 2 5 inch gun was removed from Arlake and replaced by Weapon

1966, Japanese Maritime Self-Defence Force, Official

A from the United States.

Photographs

A photograph of Yuugure appears in the 1964-65 and 1965-66 editions.

(Ex-U.S. "Gleaves-Livermore" Type)

2 "Breeze" Class

1,630 tons standard (2,775 tons Displacement:

1,630 tons standard (2,775 tons full load)
341 (w.l.), 348\frac{1}{2} (o.a.)\times 36\times 10 (mean) 18 (max.) feet
3—5 inch, 38 cal., d.p.: 8—40 mm. AA.; 4—20 mm. AA.
2 depth charge racks
Geared turbines, 2 shafts, S.H.P.: 50,000=36 kts, 30 kts. (sea)
4 Babcock & Wilcox
270 Dimensions:

A/S weapons: Machinery:

Boilers: Complement:

Complement: 270
General
Former United States destroyers of the "Gleaves-Livermore" class. DD., formerly rated as destroyer minesweepers, DMS. Taken over from the U.S.A. on 19
Oct, 1954. Names mean "Morning Breeze" and "Flag-fluttering Breeze," respectively A photograph of Asakaze appears in the 1962-63 edition.

Photographs A photograph of Hatakaze appears in the 1963-64 to 1965-66 editions.

ASAKAZE (ex-U.S.S. Ellyson. DD 454. ex-DMS 19)
HATAKAZE (ex-U.S.S. Macomb.
DD 458. ex-DMS 23)

Pennant No DD 181 DD 182

Laid down Launched 2 Dec. 1940 25 July 1941 Federal S.B..& D.D. Co. Bath Iron Works Corpn.

28 Nov. 1941 3 Sep. 1940 22 Sep. 1941 26 Jan. 1942



ASAKAZE

1966, Japanese Maritime Self-Defence Force, Official

Combleted

FRIGATES

Builders

No.

Destroyer Escort Type (DE) 4 '4 River'' Class

Displacement:

1,490 tons standard (1,700 tons

Dimensions:

Guns: Tubes A/S weapons: 1,490 tons standard (1,700 tons full load) 308½ (σ .a.)×34½×11½ feet, see Class Variation 4—3 inch, 50 cal. (two twin) 4—21 inch (quadrupled) 1 four-barrelled rocket launcher, 2 triple homing torpedo launchers, 1 D.C.T., 1 D.C. rack 4 diesels. 2 shafts. B.H.P.: 16,000=25 kts.

Machinery:

Complement:

Construction Isuzu and Mogami were built under the 1959 fiscal year new construction programme and Kitakami and Ooi were built under the 1961 fiscal year new construction programme.

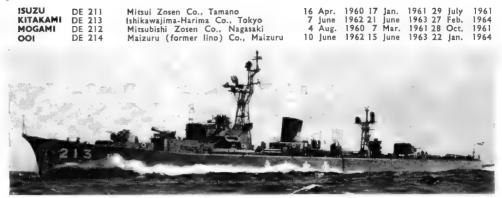
The second pair of this type, Kitakami and Ool, have a number of improvements in armament and other equipment and are reported to be of slightly different dimensions.

Nomenclature

All new frigates of the destroyer escort (DE) type are named after rivers, like the old light cruisers. This naming system applied on 1 Oct. 1960.

Photographs

A photograph of Mogam! appears in the 1961-62 edition, and of Isuzu in the 1962-63 and 1963-64 editions.



KITAKAMI

ISUZU

1964, Ishikawajima-Harima Heavy Industries Co. Ltd.

Laid down

Launched



ISUZU

1962, Japanese Maritime Self-Defence Force, Official

Diesel "B" Type DE 2 "Thunder" Class

Displacement:

Guns:

1,070 tons standard (1,300 tons

Dimensions:

1,070 tons standard (1,300 tons full load)
287 (w.l.)×28½×10½ feet
2—3 inch, 50 cal., d.p.; 2—40 mm. AA,
1 hedgehog, 8 K-guns, 2 depth charge racks
Diesels. 2 shafts. B.H.P.: 12,000 =25 kts.
5,500 miles at 15 kts.

A/S weapons:

Machinery:

Radius:

Complement:

General

Diesel powered "B" type DE Escort Vessels. Authorised by Congress under 1953 fiscal year programme. Unlike the turbine boat, Akebono, see below, which has two funnels, these diesel boats have only one funnel.

Ikazuchi means "Thunder" and Inazuma means "Thunderbolt,"

The original 2—3 inch guns and 4—40 mm. guns were removed in Mar. 1959 and replaced by 2—3 inch quick firing guns and 2—40 mm. guns.

Photographs

Another photograph of Ikazuchi appears in the 1958-59 to 1960-61 editions.

IKAZUCHI INAZUMA Pennant No. DE 202 DE 203

Builders Kawasaki Jyuko Co., Kobe Mitsui Zosen Co. Tamano

Laid down 18 Dec. 1954 25 Dec. 1954 Launched 6 Sep. 1955 4 Aug. 1955 Completed 29 May 1956 5 Mar. 1956



IKAZUCHI

1964, Kohji Ishiwata



INAZUMA

1961. Hailme Fukaya

Steam Turbine "B" Type DE I Dawn'' Class

Displacement: Dimensions:

1,060 tors standard (1,350 tons full load)
301 (o.a.)×28½×11 (max.)

Guns: Machinery: Boilers:

feet 2—3 inch, 50 cal. AA. Ishikawajima geared turbines. 2 shafts. S.H.P.: 18,000=28 kts. 2 Ishikawajima—Foster Wheeler

Complement:

type 180

General

The only steam turbine propelled DE, Rated as "B" type Escort Vessel. Built under the 1953 Programme. Akebono means "Dawn".

Gunnery

The original 2—3 inch guns and 4—40 mm. guns were removed in March 1959 when 2—3 inch quick firing guns were mounted.

AKERONO DE 201 Builders Ordered Laid down Launched Completed Ishikawajima Jyuko Co. 20 Nov. 1954 10 Dec. 1954 15 Oct. 1955 20 Mar. 1956 Tokyo



AKEBONO

1964, Kohji Ishiwata

Frigates—contd.

Rated as Radar Experimental Ship (Ex-Japanese Escort Destroyer)

1,250 tons standard (1,560 tons Displacement: Dimensions:

| 1,250 tons standard (1,500 tons full foad) | 322½ (pp.), 329½ (o.a.)×31½ ×10½ feet | 2—3 inch, 50 cal. AA. aft | Hedgehog, 4 K-guns, 2 D.C.T. | Turbines, 2 shafts, S.H.P.: 14,000=26 kts, Sea speed, 24 kts. Machinery:

Boilers:

2 Kampon 395 tons 4,680 miles at 16 kts. Oil fuel: Radius: Complement:

General

This ship, the old wartime escort destroyer Nashi, was built under the War Programme of 1943 as one of the Modified "Matsu" type. She was sunk on 28 July 1945 off Hatajiri Point, Inland Sea, by carrier borne aircraft. She was officially scrapped on 15 Sep. 1945. But she was subsequently raised and repaired and purchased by the Maritime Self-Defence Force. She completed her first reconstruction at Kure Zosen on 12 May 1956, being renamed and commissioned on 31 May. Designated "B" Type DE, Her new name Wakaba means "Young Leaf." She was intended to be used as a training ship, but she was converted into a radar picket escort vessel or General

WAKABA (ex-Nashi)

DE 261

Builders Kawasaki, Kobe

Laid down 1 Sep. 1944

Launched 17 Jan. 1945

Completed 15 Mar. 1945



WAKABA

Added 1961

aircraft direction ship. Her second reconstruction com-menced at Uraga Dock Co. on 10 Sep. 1957 and was completed on 28 Mar, 1958. Her lattice foremast and tripod mainmast were stepped in 1958. In 1961 she had a large radar aerial fitted aft.

Photographs

Photographs

Another photograph of this ship after conversion to a radar picket escort vessel, a starboard quarter view, appears in the 1958-59 edition, and a port bow view appears in the 1959-60 and 1960-61 editions.

ASAHI (ex-U.S.S. Amick, DE 168)

HATSUHI (ex-U.S.S. Atherton, DE 169)

(Ex-U.S. "Bostwick" Type Destroyer Escorts) 2 "Sun" Class

1,250 tons standard light, 1,510 tons normal (1,900 tons full load) Displacement:

 $(o.a.) \times 36\frac{1}{6} \times 10\frac{2}{3}$ (mean), Dimensions:

306 (o.a.)×36‡×10‡ (med 12 (max.) feet 3—3 inch, 50 cal. d.p.; 6—mm. AA.; 8—20 mm. AA. 8 K-guns, D.C.T. General Motors diesels with electrical designs of the second of th Guns:

A/S weapons Machinery:

tric drive 2 shafts. 6,000=20 kts, sea speed 220 B.H.P.:

Complement:

General General
Former United States destroyer escorts of the "Bostwick" class DE taken over from the U.S. Navy on 14
June 1955. Asohi means "Morning Sun"; Hatsuhi means
"First Sun of the Year."

Photographs
A photograph of Hatsuhi appears in the 1956-57 to 1960-61 editions.

No. DE 262 DE 263

Builders Federal Port Newark Federal Port

Laid down 30 Nov. 1942 14 Jan. 1943

Launched 27 May 1943

Completed 26 July 1943

27 May 1943 29 Aug. 1943

PRODUCTION OF THE

1961, Hajime Fukaya

(Ex-U.S. "Tacoma" Type Patrol Frigates)

8 "Tree" Class

KAYA (ex-U.S.S. San Pedro, PF 37) KEYAKI (ex-U.S.S. Evansville, PF 70) KIRI (ex-U.S.S. Everett, PF 8) KUSU (ex-U.S.S. Ögden, PF 39) P F 288 P F 295 P F 291 P F 281 NIRE (ex-U.S.S. Sandusky, PF 54) P F 287 SHII (ex-U.S.S. Long Beach, PF 34) SUGI (ex-U.S.S. Coronado. PF 38) P F 297 TSUGE (ex-U.S.S. Gloucester, PF 22) P F 292

1,450 tons standard (2,415 tons Displacement: Dimensions:

1,450 tons standard (2,415 tons full load)
285½ (w.l.), 304 (o.a.)×37½×
13½ (max.) feet
3—3 inch, 50 cal., d.p.; 2—40
mm. AA.; 9—20 mm. AA.
1 hedgehog, 2 depth charge
racks, 8 K-guns
Triple expansion, 2 shafts.
1,H.P.: 5,500=18 kts.
2, of 3-drum type, 240 lbs.
645 tons
9,500 miles at 12 kts. A/S weapons: Machinery:

Boilers: Oil fuel:

Complement:

General
All launched in 1943. Named after trees. Kaede and
Keyaki have a deckhouse added abaft the mainmast.
Photographs
Photographs of Kiri, Nora, Nire and Sugi appear in
the 1953-54 to 1962-63 editions. General

Transfer Transferred on loan from the United States in 1953. All were technically returned to the U.S. on 28 Aug. 1962, but were transferred outright to the Japanese Government the same day and became Japanese ships. Reclassification

Reclassification
Ten sister ships, Buna, on 1 Feb. 1965. Kashi, Moni,
Tochi and Ume on 1 Apr. 1965, and Kaede, Maki,
Matsu, Nara and Sakura on 31 Mar. 1966, were reclassified from escort vessels to training ships (moored).



KAYA

1963, Elichi Aoki



KEYAKI (with deckhouse abaft small mainmast)

Added 1966, Elichi Aoki

FAST PATROL VESSELS

	No:	Builders	- 1	Laid d	own	L	aunch	ed		Compl	eted
MIZUTORI	311	Kawasaki, Kobe	13	Mar.	1959	22	Sep.	1959	27	Feb.	1960
YAMADORI	312	Fujinagata, Osaka	14	Mar.	1959	22	Oct.	1959	15	Mar.	1960
OOTORI		Kure Shipyard				27	May	1960	13	Oct.	1960
KASASAGI	314	Fujinagata, Osaka	18	Dec.	1959	31	May	1960	31	Oct.	1960
HATSUKARI	315	Sasebo Shipyard	25	Jan.	1960	24	June	1960	15	Nov.	1960
UMIDORI	316	Sasebo Shipyard	15	Feb.	1962	15	Oct.	1962	30	Mar.	1963
WAKATAKA	317	Kure Shipyard	- 5	Mar.	1962	13	Nov.	1962	30	Mar.	1963
KUMATAKA	318	Fujinagata, Osaka	20	Mar.	1963	21	Oct.	1963	25	Mar.	1964
SHIRATORI	319	Sasebo Shipyard	29	Feb.	1964	8	Oct.	1964	27	Feb.	1965
HIYODORI	320	Sasebo Shipyard	29	Feb.	1965	25	Sep.	1965	28	Feb.	1966

10 "Mizutori" Class Submarine Chasers (PC)

Displacement:	420	to	450	tons	standard
Dimensions:	197	<23	13×7	fee	et

197/×23½×7½ feet
2—40 mm. (twin)
1 hedgehog, 1 D.C. rack, 2 homing torpedo launchers.
2 MAN diesels. 2 shafts. B.H.P.: 3,800=20 kts.
24·5 tons
2,000 miles at 12 kts, Guns: A/S weapons: Machinery:

Oil fuel: Radius:

Construction
Mizutori and Yamadori built under 1958 programme, Ootori, Kasasagi and Hatsukari 1959, Umidori (Sea Bird) and Wahataka (Young Hawk) 1961, Kumataka 1962, Shiratori (White Bird) 1963.



COTORI

1961, Japanese Maritime Self-Defence Force, Official

	No.	Builders	- 1	aid do	wn	L	aunci	hed	- (Comple	eted
UMITAKA OOTAKA		Kawasaki, Kobe Kure Shipyard		Mar. Mar.				1959 1959		Nov. Jan.	

2 "Umitaka" Class Submarine Chasers (PC)

Displacement:	440 to 480	tons standard
Dimensions:	197×23½×8	feet
Gunse	2-40 mm	(twin)

2—40 mm. (twin)

1 hedgehog, 1 D.C. rack, 2 triple A/S torpedo launchers

2 B & W. diesels, 2 shafts. B.H.P.: 4,000=20 kts.

2 tons

2,000 miles at 12 kts. A/S weapons: Machinery: Oil fuel:

Radius: Complement:

General

General
Ootaka and Umitaka were built under the 1957 programme. Same hull and armament as "Mizutori" class. Design improved from "Kamome" and "Kari" classes, emphasising good sea-keeping qualities. Ootaka means Great Hawk. Umitaka Sea Hawk.



1960, courtesy Kure Shipyard, Builders

I Gas Turbine Type Submarine Chaser (PC)

HAYABUSA 308

380 tons standard
190½×25½×7 feet
2—40 mm. AA. (twin)
1 Hedgehog, 2D.C. throwers, 2 D.C. racks
1 Gas turbine. H.P.: 5,000. 2 diesels. B.H.P.: 4,000.
CODAG, Total H.P.: 9,000=26 kts.
22 tons
2.000 miles
75 Displacement: Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:

Oil fuel: Radius: Complement:

Built under the 1954 fiscal year programme by Mitsubishi Shipbuilding & Engineering Co. Ltd., Nagasaki. Laid down on 23 May 1956. Launched on 20 Nov. 1956. Completed on 10 June 1957. The gas turbine was installed in Mar. 1962.



HAYABUSA

Mitsubishi Shipbuilding & Engineering Co. Ltd.,

Fast Patrol Vessels-contd.

	No.	Builders			lown			ed		Compl	
KAMOME	305	Uraga	27	Jan.	1956	3	Sep.	1956	-14	Jan.	1957
KARI	301	Fujimagata, Osaka	18	Jan.	1956	26	Sep.	1956	8	Feb.	1957
KIJI	302	lino, Maizuru	14	Dec.	1955	11	Sep.	1956	29	Jan.	1957
MISAGO	307	Uraga	27	Jan.	1956	1	Nov.	1956	11	Feb.	1957
TAKA	303	Fujimagata, Osaka	18	Jan.	1956	17	Nov.	1956	11	Mar.	1957
TSUBAME	306	Kure Shipyard	15	Mar.	1956	10	Oct.	1956	31	Jan.	1957
WASHI	304	lino, Maizuru	14	Dec.	1955	12	Nov.	1956	20	Mar.	1957

7 Diesel Type Submarine Chasers (PC)

330 tons standard (Kari, Kiji, Taka, Washi, 310 tons) 173\frac{1}{2} (o.a.) \times 21\frac{1}{2} \times 6\frac{1}{2} \times 6\ Displacement: Dimensions: Guns: A/S weapons: Machinery:

Oil fuel: Radius: Complement:

Authorised under the 1954 programme, At the time they were an entirely new type of fast patrol vessels or submarine chlasers, reminiscent of the United States PC type but modified and improved in many ways. Kamome means "Seagull". A photograph of Kamone appears in the 1957-58 to 1965-66 editions.



MISAGO

1966, Japanese Maritime Self-Defence Force, Official

MINELAYERS

Minelayer and Cable Layer (ARC)

TSUGARU 481

Displacement: 950 tons standard Dimensions:

216½×34½×11 feet 1—3 inch, 50 cal., d.p.; 2—20 mm. AA.; 4 K-guns 4 mine laurchers, capacity of 40 mines Diesel. 2 shafts. B.H.P.: 3,200=16 kts. Guns: Mines: Machinery: Complement:

Construction

Dual purpose cable layer and coastal minelayer. Built under the 1953 programme by Yokohama Shipyard & Engine Works, Mitsubishi Nippon-Heavy Industries Ltd. Laid down on 18 Dec. 1954. Launched on 19 July 1955. Completed on 15 Dec. 1955.



TSUGARU

1966, Japanese Maritime Self-Defence Force, Official

Minelayer and Minesweeper (AMC)

ERIMO 491

630 tons standard 210×26×8 feet 2—40 mm. AA.: 2—20 mm. AA. 1 hedgehog. 2 K-guns. 2 D.C. racks Diesel. 2 shafts. B.H.P.: 2,500=18 kts. Displacement: Dimensions:
Guns:
A/S weapons:
Machinery: Complement: 80

Multi-purpose minelayer, ocean minesweeper (non-magnetic) and submarine chaser. Authorised under 1953 fiscal programme. Built by Uraga Dock Co. Laid down on 10 Dec. 1954. Launched on 12 July 1955, Completed on 28 Dec. 1955.



ERIMO

1966, Japanese Maritime Self-Defence Force, Official

COASTAL MINESWEEPERS

No.	Laid down	Launched	Completed
MSC 604	9 July 1956	19 Mar. 1958	26 June 1958
MSC 605	20 July 1956		16 Aug. 1958
MSC 606	25 Aug. 1958		24 July 1959
MSC 607	16 Aug. 1958		25 Aug. 1959
MSC 608	24 Mar. 1959		22 Sep. 1959
MSC 609	30 Mar. 1959		26 Feb. 1960
MSC 610	25 Aug. 1956		26 Mar. 1960
MSC 611	24 Mar. 1959		27 Apr. 1960
MSC 612	30 Mar. 1959		27 May 1960
	12 Jan. 1960		15 Nov. 1960
	14 Mar. 1960		17 Dec. 1960
	20 Mar. 1961		29 Jan. 1962
			24 Feb. 1962
	15 Mar. 1962		23 Mar. 1963
	19 Mar. 1962	10 000	27 Mar. 1963
	28 Mar. 1963		24 Mar. 1964
	27 Mar. 1963	29 Nov. 1963	25 Mar. 1964
	25 Mar. 1964	5 Nov. 1964	24 Feb. 1965
		8 Dec. 1964	24 Mar. 1965
	9 Mar. 1964	22 Nov. 1965	5 Mar. 1966
MSC 624	27 Mar. 1965	7 Dec. 1965	25 Mar. 1966
	MSC 605 MSC 606 MSC 607 MSC 608 MSC 609 MSC 610 MSC 611	MSC 604 9 July 1956 MSC 605 20 July 1956 MSC 606 25 Aug. 1958 MSC 607 16 Aug. 1958 MSC 608 24 Mar. 1959 MSC 609 30 Mar. 1959 MSC 610 25 Aug. 1958 MSC 611 24 Mar. 1959 MSC 613 12 Jan. 1960 MSC 613 12 Jan. 1960 MSC 614 14 Mar. 1960 MSC 615 20 Mar. 1961 MSC 616 22 Mar. 1961 MSC 617 15 Mar. 1962 MSC 619 28 Mar. 1962 MSC 619 28 Mar. 1963 MSC 620 27 Mar. 1963 MSC 621 17 Mar. 1964 MSC 622 17 Mar. 1964 MSC 623 9 Mar. 1964	MSC 604 9 July 1956 19 Mar. 1958 MSC 605 20 July 1956 20 Mar. 1958 MSC 606 25 Aug. 1958 22 Apr. 1959 MSC 607 16 Aug. 1958 22 Apr. 1959 MSC 608 24 Mar. 1959 19 June 1959 MSC 609 30 Mar. 1959 12 Nov. 1959 MSC 610 25 Aug. 1956 14 Jan. 1960 MSC 611 24 Mar. 1959 12 Jan. 1960 MSC 612 30 Mar. 1959 14 Mar. 1960 MSC 613 12 Jan. 1960 22 July 1960 MSC 614 14 Mar. 1960 30 Oct. 1960 MSC 615 20 Mar. 1961 9 Nov. 1961 MSC 616 22 Mar. 1961 23 Oct. 1961 MSC 616 22 Mar. 1961 11 Dec. 1962 MSC 617 15 Mar. 1962 10 Dec. 1962 MSC 618 19 Mar. 1962 10 Dec. 1962 MSC 619 28 Mar. 1963 16 Dec. 1963 MSC 620 27 Mar. 1964 5 Nov. 1964 MSC 621 25 Mar. 1964 5 Nov. 1964 MSC 622 17 Mar. 1964 8 Dec. 1964 MSC 623 9 Mar. 1964 22 Nov. 1964

21 "Kasado" Class

Displacement: Dimensions:

Guns: Machinery:

340 tons 151×27½×7½ feet 1—20 mm. AA. 2 diesels. 2 shafts. B.H.P. 1,200=14 kts.

General
Anti-magnetic type minesweepers. Hull is of wooden construction with form for speed. Otherwise built of non-magnetic materials. Kasado was built by Hitachi, Kanawaga Works, Shishaka by Tsurumi. Japan Steel Works, Sakito by Nippon Steel Tube Co. (Tsurumi Works), Habushi and Kanawa by Hitachii Shipbuilding Co. (Kanawaga Works of Kawasaki). Kasado and Shisaka were built under the 1955 programme, Habushi, Kanawa and Sakito 1957, four 1958, two 1959, two 1960, two 1961, two 1962, two 1963, two 1964.



SHISAKA

1961

YASHIRO

I "Yashiro" Class

Displacement: Dimensions:

Guns: Machinery: Complement: 230 tons standard (255 tons full load) 118 (pp.) $\times 22_1^2 \times 6_2^1$ feet 1—20 mm. AA. Diesel. 2 shafts. B.H.P.: 1,200=13 kts.

General

Built under the 1953 Programme by the Nippon Kokan Co., Tsurumi. Laid down on 22 June 1955, launched on 26 Mar. 1956 and completed on 10 July 1956, No. MSC 603, She is of a different type from Atodo and Itsuki (see below).



YASHIRO

1957. Nippon Steel Tube Co. Ltd., Builders

2 "Atada" Class

ATADA ITSUKI

No. MSC 601 MSC 602

20 June 1955 22 June 1955

Laid down Launched 12 Mar. 1956 12 Mar. 1956

Completed 30 Apr. 1956 20 June 1956

Displacement: Dimensions: Guns: Machinery: Oil fuel:

240 tons standard (260 tons full load) 118 (pp.), 123½ (o.a.)×21×6¾ feet 1—20 mm, AA. Diesel. 2 shafts. B.H.P.: 1,200=13 kts,

20 tons 2,000 miles at 10 kts.

Radius: Complement:

General Of wood and light metal construction. Authorised under the 1953 fiscal year programme. Built by the Hitachi Zosen Co. Named after small islands. A photograph of Atada appears in the 1957-58 to 1959-60 editions.



1960, Nippon Steel Tube Co., Ltd., Builders

Coastal Minesweepers-contd.

4 "Yashima" Class
95) TSUSHIMA (ex-U.S.S. MSC (ex-AMS 255)
258) YASHIMA (ex-U.S.S. AMS 144) HASHIMA (ex-U.S.S. AMS 95) (ex-U.S.S. MSC 258)

335 tons standard (375 tons full load) 138 (pp.), 144 (o.a.) \times 26 $\frac{1}{2}\times$ 8 $\frac{1}{2}$ feet 2 General Motors diesels. B.H.P.: 880=13 kts. 39 Displacement: Dimensions:

Machinery: Complement:

General General
Former U.S. auxiliary minesweepers of non-magnetic construction, Transferred
on 3 June 1955 (Hashima, MSC 652), 1 Feb. 1957 (Toshima, MSC 654), 18
July 1956 (Tsushima, MSC 652), and 16 Dec. 1954 (Yashima, MSC 651), A
photograph of Yashima appears in the 1961-62 to 1965-66 editions.



TOSHIMA

1966, Japanese Maritime Self-Defence Force, Official

9 "Ujishima" Class

ETAJIMA (ex-U.S.S. Firecrest, AMS 10) OGISHIMA (ex-U.S.S. Pelican, AMS 32)
MOROSHIMA (ex-U.S.S. Hummer,
MSC(o) 20) YAKUSHIMA (ex-U.S.S. Condor, AMS 5)
YAKUSHIMA (ex-U.S.S. Cosprey, AMS 28)
NUWAJIMA (ex-U.S.S. Heron, AMS 18) YUGSHIMA (ex-U.S.S. Chatterer, AMS 40)

Displacement: Dimensions:

Guns:

Machinery: Complement:

310 tons standard (350 tons full load)

136×24½×8 (max.) feet
1—40 mm. AA.: 2—20 mm. AA. (Moroshima and Ninoshima 2—20 mm. AA.)

2 General Motors diesels. B.H.P.: 1,000=12 kts.

General Former U.S. "Albatross" class coastal minesweepers of wooden construction, formerly known as auxiliary motor minesweepers (AMS) but reclassified as Minesweepers, Coastal (old) or MSC(o) in Feb. 1955. Moroshima and Ninoshima were transferred from the United States on loan to Japan under MDAP on 16 Mar. 1959, the remainder in 1955. All named after small islands around the Japanese homeland. Pennant Nos. 656, 663, 662, 657, 659, 655, 658, 660 and 661, respectively.

Disposals

The inshore minesweepers Hatsutaka, Hayatori, Hiyodori, Okichidori and Yuchidori were officially deleted from the list in 1966. See 1965-66 edition for previous

disposals.



MOROSHIMA

No. 5

MINESWEEPING BOATS (Sookaitei)

No. 1 Displacement:

MB 5

No. 2

No. 4 40 toms $57\frac{1}{4}$ (w.l.), $62\frac{1}{3}$ (o.a.)×16×4 feet Diesels. 2 shafts B.H.P.; 320=10 kts.

Machinery Complement:

Dimensions:

10

No. 3

General

Three authorised in 1954 and one in 1955. Nos. 1, 2 and 3 were launched in Jan, and Feb. 1957 and completed in Mar. and Apr. 1957. Nos. 1 and 2 were built by Hitachi, Kanagawa; and the otips by Nihon Kohan, Tsurumi. (Nippon Steel Tube Co., Tsurumi Works), Named Sokaitei Nos. 1 to 6 and numbered MSB 701 to 706. No. 4 was launched in Apr. 1957 and completed in June 1957. Nos. 5 and 6 were laid down in Aug. 1958 and completed in Feb.-Mar. 1959. General



MOTOR TORPEDO BOATS (Gyoraitei)

No. 10 Displacement: Dimensions:

90 tons standard (120 tons full load)
105×27½×3½ feet
2—40 mm. AA. (1 forward, 1 aft)
4—21 inch (single, amidships)
3 Napier Deltic diesels. B.H.P.: 9,400=40 kts. Guns: Tubes: Machinery: Complement:

1960 programme. Built by Mitsubishi, Shimonoseki. Laid down on 30 Jan. 1961. Launched on 28 July 1961. Completed on 25 May 1962. Light metal hull.



PT 10

1964, Mitsubishi Shipbuilding & Engineering Co. Ltd.

PT 9 Displacement: Displacemen Dimensions: Tubes:

Machinery:

55 tons $71\frac{1}{2}\times19\frac{1}{4}\times6$ feet 2.—21 inch 2 Napier Deltic diesels. B.H.P.: 5,000=40 kts.

Complement:

Basically similar to the British "Dark" class MTBs. Built by Saunders-Roe (Anglesey) Ltd., Beaumaris, Delivered to Yokosuka Naval Base on 29 July 1957. Accepted into service on 2 Sep. 1957, Has mounting for 1—40 mm. AA. (gun not fitted).



PT 9

1958. Saunders-Roe (Anglesey) Ltd.,

No. 7

No. 8 Displacement: Dimensions:
Guns:
Tubes:
Machinery:
Complement:

No. 8
100 tons
112×243×4 feet
2—40 mm. AA.
4—21 inch
3 Mitsubishi diesels. 3 shafts. B.H.P.: 6,000=33 kts:
30

Authorised in the 1954 fiscal year. Built by Mitsubishi Zosen. Co., Shimonoseki Works. Both laid down on 23 Aug. 1956, launched on 2 Feb. and 20 July 1957, respectively, and completed on 19 Dec. 1957 and 10 Jan. 1958. Light metal hulls.



PT 8

1966, Japanese Maritime Self-Defence Force, Official

No. 3 No. 4 No. 5

Displacement: Dimensions: Guns: Tubes:

No. 2

Machinery:

75 tons (Nos. 3 and 4 70 tons)
82×20×6 feet
1-40 mm. AA.
2-21 inch torpedo launchers
2 diesel engines, B.H.P.: 4,000=31 kts.

Complement: 18

Authorised under the 1953 fiscal year programme, Nos. 1 and 2 have wooden hulls, Nos. 5 and 6 have steel hulls, and Nos. 3 and 4 have light metal hulls, Builders: Azuma Zosen Co. (Nos. 5 and 6), Hitachi Zosen Co. (Nos. 1 and 2), and Mitsubishi Zosen Co. (Nos. 3 and 4). Numbers 801 to 809 were assigned on 1 Sep. 1957.



MTB No. 1

1957, Hitachi Shipbuilding Co., Builders

SUBMARINE RESCUE VESSELS

CHIHAYA ASR 401

Displacement: Dimensions:

1,340 tons standard 239½×39½×12½ feet Diesels, B.H.P.: 2,700=15 kts. Machinery:

Complement:

General Authorised under the 1959 fiscal year programme. The first vessel of her kind to be built in Japan, Laid down on 15 Mar, 1960. Launched by Mitsubishi Nippon Heavy Industries Co., Yokohama on 4 Oct. 1960. Completed on 15 Mar. 1961. Has rescue chamber recompression chamber, and four-point mooring equipment.



CHIHAYA

1961, Japanese Maritime Self-Defence Force, Official

DRONE TARGET CARRIER

Ex-U.S. LSSL Type

HAMAGIKU (ex-415, ex-U.S.S. LSSL 87)

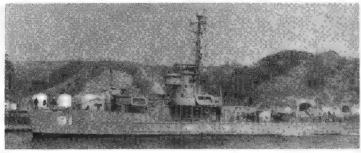
Displacement: Dimensions: Guns: Machinery:

300 tons standard 158 $\frac{1}{2}$ (o.a.) \times 23 $\frac{1}{2}$ \times 5 $\frac{5}{2}$ feet 2—40 mm. AA. Diesels. 2 shafts. B.H.P.: 1,800=12 kts.

Complement:

General

General Former American LSSL. Sole survivor in the Japanese M.S.D.F. of the 53 Landing Ships Support, Large, transferred from the U.S.A, in 1953 and 1956 and employed as patrol vessels or support gunboats. Refitted as Drone Target Carrier in 1958. 22 patrol vessels, ex-LSSLs, sister ships of Hamogiku, were relegated to service craft and used for miscellaneous duties in 1960, including YAS 18 and YAS 19, see names of these (and the 27 units of this "Flower" class returned to the U.S.A. in 1958 and 1959) in the 1960-61 edition.



HAMAGIKU

1963. Japanese Maritime Self-Defence Force, Official

ICEBREAKER (AGB)

FUJI

No. 6

Displacement: Dimensions: Aircraft: Machinery:

5,250 tons standard, 7,760 normal (8.566 full load) $328\times72\frac{1}{4}\times29$ feet 3 helicopters Diesel electric, 2 shafts, S.H.F.: 12,000=16 kts. 5,000 miles at 15 kts, 200 plus 35 scientists and observers

Radius: Complement:

Icebreaker and Antarctic Support Ship. Built by Tsurumi Shipyard, Yokohama, Nippon Kokan Kabushiki Kaisha. Laid down on 28 Aug. 1964 and launched on 18 Mar. 1965 for delivery on 15 July. Equipped with hangar and flight deck aft. Pennant No. 5001. Named after the mountain.



FU JI

1966, Japanese Maritime Self-Defence Force, Official

TANK LANDING SHIPS

OOSUMI 4001

Displacement: Dimensions:

Guns: Machinery: Complement:

SHIMOKITA 4002 SHIRETOKO 4003

SHIRETOKO 4003 1.650 tons standard (4.080 tons full load) 316 (w.l.), 348 (o.a.)×50×14 feet 7—40 mm. AA., 2—20 mm. AA. General Motors diesels. 2 shafts. B.H.P.: 1,700=11 kts. 70

General Former United States tank landing ships Daggett County, LST 689. Hillsdale County, LST 835, and Nansemond County, LST 1064, built by Jeffersonville B. & M. Co., Jeffersonville, Ind.; American Bridge Co., Ambridge, Pa.; and Bethlehem Steel Co., Hingham. Mass.. respectively. All built in 1944-45. Transferred from the U.S.A. under the Military Aid Program and commissioned in the Japanese Maritime Self-Defence Force on 1 Apr. 1961. Named after homeland peninsulars.



COSTIMI

1962, Japanese Maritime Self-Defence Force, Official

MEDIUM LANDING SHIP (Yoorikutei)

LSM 3001 (ex-French LSM 9013, ex-U.S.S. LSM 125) Displacement: Dimensions: 743 tons beaching (1.095 tons full load) 196_{5} (w.l.), $203_{\frac{1}{2}}$ (o.a.)×34 $\frac{1}{2}$ ×5 $\frac{1}{2}$ (beaching), 8 $\frac{1}{2}$ (max.) feet

Guns:

2-40 mm. AA., 6-20 mm. AA. Diesels. 2 shafts B.H.P.: 2,800=12 kts.

Machinery: Complement: General

General LSM 3001 was transferred from the United States Navy to the French Navy in 1954 for use in Indo-China. She was returned by the French in 1957 to the U.S. Navy, and then transferred to the Japanese in 1958. Named Yorikutei No. 3001. A photograph appears in the 1958-59 to 1960-61 editions.



LSM 3001

1966. Japanese Maritime Self-Defence Force. Official

LANDING CRAFT

LCU 2001 LCU 2002 Displacement:

LCU 2003

LCU 2004 LCU 2005 LCU 2006

187 tons General

Former United States LCU 1602, 1603, 1604, 1605, 1606 and 1607 transferred under MAP.

42 Ex-U.S. LCM Type

LCM 1001-1042

Displacement:

22 tons

Displacement: 22 tons

General
55 landing craft comprising 6 LCUs of 187 tons, 29 LCMs of 22 tons and 20 LCVPs of 8 tons were transferred from the United States on 2 June 1955, 13 LCMs, Nos. 1030—1042, were transferred from the United States under MAP in 1961.

HIGH SPEED BOATS (Koosoku)

KOOSOKU 4

KOOSOKU 5

Displacement:

26 tons $75\frac{1}{2}\!\times\!18\!\times\!2\frac{1}{2} \text{ feet} \\ 2 \text{ Packard engines. B.H.P.: } 3,000\!=\!40 \text{ kts.}$

General

Of aluminium construction. Laid down on 10 Oct. 1958 and 11 Dec. 1958 at Mitsubishi, Shimonoseki Works under the 1957 and 1958 Programme, launched on 11 Dec. 1958 and 2 Mar. 1959, and completed on 11 May 1959 and 12 June 1959, respectively. Pennant Nos. ASH 04 and 05.

KOOSOKU 1

KOOSOKU 2

KOOSOKU 3

Displacement:

30 tons 65{×17×2} feet Dimensions:

 $65\frac{1\times17\times2}{2}$ feet 2 Packard petrol engines. B.H.P.: 3,000=42 kts. Machinery:

General

General
ASH category. Of wooden construction. Former names of Kosoku 1 and 2 were
YS 03, YS 04 as service craft. All are Maritime Self-Defence Force auxiliaries.

KOOSOKU 29

Displacement: Dimensions: Machinery:

46 tons $85\frac{1}{2}\frac{4}{2}\frac{4}{3}$ feet 2 Packard engines. B.H.P.: 3,000=34 kts.

KOOSOKU 11, 12

KOOSOKU 21, 22, 23, 24, 25, 26, 27, 28, 30

Displacement: Dimensions:

30 tons $63\frac{1}{2}\!\times\!15\frac{1}{4}\!\times\!6$ feet 2 petrol engines. B.H.P.: 1,200=33·5 kts.

General

Machinery:

General Pennant Nos.: ASH 11, 12 and 21-26 were transferred under MAP in 1958-59. Pennant Nos.: ASH 27-30 were transferred under MAP in 1961-62. There is also a new fire defence boat, Shobo 41, 45 tons, 75×18×3¼ feet, 4 diesels—19 kts. Built by Azumo Zosen, Yokosuka, completed on 28 Feb, 1964.

PATROL BOATS (Shookai)

SHOOKAI 1, 2, 3, 4, 5, 6, 7 SHOOKAI 11, 12, 13, 14, 15, 16, 17,

Displacement: Dimensions: Machinery:

18 tons $45\frac{1}{2}\times13\frac{2}{3}\times3\frac{1}{4}$ feet 2 diesels. B.H.P.: 450=16 kts.

General

These vessels were transferred to lapan under the MAP programme in 1958.

MINESWEEPER TENDERS (MST)

HAYATOMO (ex-U.S.S. Hamilton County, LST 802)
Displacement:
Dimensions:
Guns:
Machinery:
Complement:

Hayatom (ex-U.S.S. Hamilton County, LST 802)
1,650 tons standard (4.080 tons full load)
316 (w.l.), 328 (o.a.)×50×14 feet
7—40 mm. AA., 2—20 mm. AA. (original armament)
General Motors diesels, 2 shafts. B.H.P.: 1,700=11 kts.

General Former United States tank landing ship. Built by Jeffersonville B. & M. Co., Jeffersonville, Ind. Laid down on 2 Sep. 1944, launched on 19 Oct. 1944, and completed on 13 Nov. 1944. Purchased from the U.S. Navy on 30 June 1960. Rated as an MSC Tender. Pennant No.: MST 461.



HAYATOMO

1963, Tatuo Kamino

NASAMI (ex-U.S.S. FS 408)

1963.

2 "Miho" Class

MiHO (ex-U.S.S. FS 524) Displacement: Dimensions:

706 tons 177×30×10 feet Diesels. 2 shafts. 8.H.P.: 1,000=11 kts.

Transferred from the United States in 1955. Nasami is rated as a minesweeper tender (MST), Miho. formerly rated as ASS, was relitted as an inshore minesweeper depot ship in August 1959. A photograph of Nasami appears in the 1957-58 edition.

OILERS (AO)

HAMANA
Displacement: Dimensions:

Guns: Machinery:

2,900 tons light (7.550 tons full load) $420.51\frac{1}{2}(20.5)$ feet 2—40 mm. AA. Diesel. B.H.F.: 5,000=16 kts.

Built by Uraga Dock Co. under the 1960 programme, Laid down on 17 Apr. 1961, launched on 24 Oct. 1961, and completed on 10 Mar. 1962, Named after the lake.



HAMANA

1966, Japanese Maritime Self-Defence Force, Official

Machinery:

Displacement: 213 tons light (711 tons full load) 2 sets diesels. 2 shafts. B.H.P.: 400=9 kts. General Built by Hayashikane S.B. & Eng. Co. Shimonoseki. Completed on 28 Feb. 19 There is also YW-10, a water carrier of 178 tons completed on 11 Mar. 1963.

THOS

YT-35

Displacement: Machinery: General

100 tons normal 2 sets diesels, 2 shafts, B.H.P.: 400-9 kts.

Built by Hayashikane S.B. & Eng. Co. Completed on 28 Feb. 1963. Harbour tug.

TOBA

Displacement: 390 tons

Dimensions: Machinery:

126}×28×12 feet 1 diesel, B.H.P.: 1,200=11 kts.

General AST category. Of wooden construction. Former name was LT 392.

SUMA

Displacement: Dimensions: Machinery:

115 tons 70}×19×5 feet 1 diesel. B.H.P.: 600=12 kts.

General

ATR category. Steel construction. Former name YTL 749. The small harbour tugs YTL 162, 167, 203, 244, 748, 749 and 750 were transferred by the U.S.A.

Personnel: 11,236 as of 1 Jan. 1966

MARITIME SAFETY AGENCY

Established in May 1948 as an external organisation of the Ministry of Transport.

LARGE PATROL VESSELS

ERIMO PL 13

1,009 tons normal (official figures) 239 $\frac{1}{2}$ (w.l.)×30 $\frac{1}{2}$ ×9 $\frac{1}{2}$ feet 1.—3 inch, 50 cal.;; 1.—20 mm, AA, Diesels, 2 shafts. B.H.P.: 4,800=19.78 kts. Displacement: Dimensions: Guns Machinery:

General

Built by Hitachi Zosen Co. Ltd. Laid down on 29 Mar. 1965, launched on 14 ug. 1965 and completed on 30 Nov. 1965. Her structure is strengthened against Aug. ice. Employed as a patrol vessel off northern Japan.



ERIMO

1966, Japanese Maritime Safety Agency, Official

KOJIMA PL 21

 $\begin{array}{c} 1,100 \quad tons \\ 228\frac{1}{3}{\times}33\frac{3}{4}{\times}10\frac{1}{2} \quad feet \\ Diesels, \quad H.P.: \quad 2,600{=}17 \quad kts. \end{array}$ Displacement: Machinery:

General

Maritime Safety Agency's new training ship. Completed on 21 May 1964 at Kure



NOJIMA PL 11

2 "Nojima" Class

OJIKA PL 12

950 tons standard, 980 tons normal (1,100 tons full) 208 $\frac{1}{4}$ (pp.), 226 $\frac{1}{4}$ (0.a.)×30 $\frac{1}{4}$ ×10 $\frac{1}{4}$ feet 2 sets diesels. B.H.P.: 3,000=17·5 kts, 6,000 miles at 14 kts. Displacement: Dimensions: Machinery:

Radius: Complement: General

Nojima was built by Uraga Dock Co. Ltd. Laid down on 27 Oct. 1961, launched on 12 Feb. 1962, and completed on 30 Apr. 1962. Ojika was completed on 10 June 1963. Both employed as patrol vessels and weather ships.



2 "Muroto" Class

NOIIMA

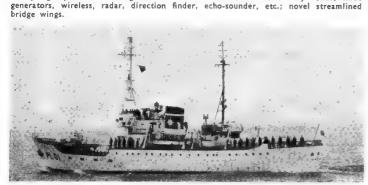
1966, Elichi Aoki

DAIO PL 02 Displacement: Dimensions:

MUROTO PL 01 750 tons standard (840 tons normal)
182 (pp.), 200 (o.a.) \times 30½ \times 10¼ feet
1—3 inch, 50 cal.; 2—20 mm. AA,
2 sets, 4 cycle single acting diesels. 270 r.p.m. B.H.P.:
1,500=15:37 kts. (trials), 12 kts. (service)

Guns General

Muroto, built by Uraga Dock Company Ltd., Tokyo, was laid down on 16 Aug. 1949, launched on 5 Dec. 1949, and delivered on 20 Mar. 1950 to the Maritime Safety Agency. Rated as Large Patrol Vessels. Vertical tubular donkey boiler, three generators, wireless, radar, direction finder, echo-sounder, etc.; novel streamlined



MUROTO

1966, Elichi Aoki

Large Patrol Vessels-contd.

SOYA PL 107

4,364 tons normal (4,818 tons full load) $259\frac{1}{2}$ (w.l.) $\times51\frac{8}{8}$ (including bulge) $\times18\frac{7}{8}$ feet 4 helicopters (see General) 2 sets diesels, B.H.P.: 4,800=12.5 kts. on trials 16,400 miles at 11 kts. Displacement: Dimensions: Aircraft: Machinery: Radius: Complement:

General
Originally a large Lighthouse Supply Ship and Navigational Aid Vessel (LL) but converted by Asano Dockyard of Nippon Steel Tube Co. Ltd. into a South Pole Research Ship. Her first conversion began on 12 Mar. 1956 and was completed on 10 Oct. 1956. The second conversion began on 1 July 1957 and was completed on 30 Sep. 1957. The third conversion was completed on 5 Oct. 1958. She carried two Sikorsky S—58 helicopters and two Bell 47G-2 helicopters on a new flight platform laid on the quarter deck for exploration and surveying in the Antarctic. She was designed for breaking ice more than 4 feet thick. Upon completion of her Antarctic research mission in 1963 she was assigned to guard and rescue service as an ordinary patrol vessel.



SOYA

1959, Japanese Maritime Safety Agency, Official

MIURA PL 101

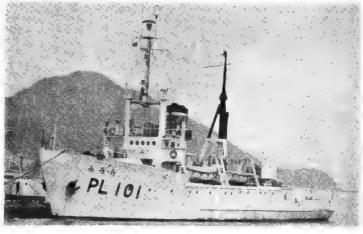
I "Miura" Type 680 tons standard (879 tons normal)
160} (pp.), 175\(\frac{1}{2}\) (o.a.)\(\times 1 \) \(\frac{1}{2}\) The tolemap (1) \(\frac{1}\) The tolemap (1) \(\frac{1} Displacement: Dimensions: Guns: Machinery: Boilers:

General

Former naval tug. Completed on 5 Dec. 1944. Officially rated as a large patrol ressel. Disposals

Disposals

Of the five former naval escorts or frigates of the "Ukuru" class Atsumi (exChikabu) PL 103 was officially deleted from the list in 1962. Ojika (ex-Ikuna)
PL 102 in 1963, Kojima (ex-Shiga) PL 106 in 1964, and Satusma (ex-Ukuru) FL
104 and Tsugara (ex-Shinnan) PL 105 in 1966.



MILIRA

1966, Nobuo Itoki

DAITO PM 22

MEDIUM PATROL VESSELS 5 "Chifuri" Class

CHIFURI PM 18 KUROKAMI PM 19

Displacement: Dimensions: Guns Machinery: Radius:

KOZU PM 20 SHIKINE PM 21 465 tons standard (483 tons normal) 169 (pp.), 177 (w.l.) $\times 25\frac{1}{4} \times 8\frac{1}{2}$ feet (normal) 1—3 inch, 50 cal.; 1—20 mm. AA, 2 sets diesels. B.H.P.: 1,300=15·8 kts. 4,400 miles at 12 kts.

General

An improved version of the "Rebun" class design, All completed in 1952. Photographs

A photograph of Chifuri appears in the 1962-63 to 1965-66 editions.



DAITO

1966, Elichi Aoki

Medium Patrol Vessels-contd.

14 "Rebun" Class

NOTO PM 13 HEKURA PM 14 MIKURA PM 15 KOSHIKI PM 16 HIRADO PM 17 REBUN HACHIJO AMAKUSA OKUSHIRI IKI OKI PM 05 PM 06 10 GENKAL PM 07 KUSAKAKI PM PM RISHIRI Displacement:

450 tons standard (488 tons trials, 495 tons normal) 155 $\frac{1}{2}$ (pp.), 164 (w.l.), 170 (o.g.)×26 $\frac{1}{2}$ ×8 $\frac{1}{2}$ feet 1—3 inch, 50 cal.; 1—20 mm. AA, 2 sets diesels B.H.P.: 1,300=15 kts. Dimensions: Guns: Machinery:

3,000 miles at 12 kts. Radius:

General A development of the original "Awaji" class design, All completed in 1951.

Photographs

A photograph of Mikura appears in the 1961-62 to 1964-65 editions, and of Genkal in the 1963-64 to 1965-66 editions.



HACHIIO

1966, Official

SADO PM 03

3 "Awaji" Class

AWAJI PM 01 MIYAKE PM 02

Displacement: 510 tons standard (550 tons normal) Dimensions:

172 (o.a.) $\times 26\frac{1}{2} \times 9\frac{1}{4}$ feet 1—3 inch, 50 cal.; 1—20 mm. AA. 2 sets diesels. B.H.P. 1,300=15 kts, 3,000 miles at 12 kts. Guns: Machinery:

General
Of a design resembling United States Coast Guard Cutters. All completed in 1950. A photograph of Awaji appears in the 1962-63 and 1963-64 editions.



SADO

1966. Elichi Aoki

SMALL PATROL VESSELS

AMAML PS 62

4 "Matsuura" Class MATSUURA PS 60 NATORI PS 63

SENDAL PS 61

420 tons standard (425 tons normal) $163\frac{1}{2}$ (pp.), $181\frac{1}{2}$ (o.a.)×23×7 $\frac{1}{2}$ feet 1—20 mm. AA. 2 sets diesels, B.H.P.: 1,400=16·5 kts. 3.500 miles at 13 kts. Displacement: Dimensions Guns: Machinery:

Radius: Complement:

Construction Construction

Matsuura and Sendai were built by Osaka Shipbuilding Co. Ltd. Matsuura was laid down on 16 Oct. 1960, launched on 24 Dec. 1960 and completed on 18 Mar. 1961. Sendai was laid down on 23 Aug. 1961, launched on 18 Jan. 1962 and completed on 21 Apr. 1962. Amami completed on 29 Mar. 1965, and Natori completed in 1966, were built by Hitachi Zosen Co. Ltd.



MATSHIRA

1966, Fiichi Aoki

TESHIO PS 53

Construction

I "Teshio" Class

421.5 tons normal 149½ (pp.), 159 (w.l.)×23×8½ feet 1—40 mm. AA. 2 sets diesels. B.H.P.: 1,400=15.71 kts. 3,690 miles at 12 kts. Displacement: Dimensions: Guns: Machinery:

Radius: Complement:

Built by Uraga Dock Co. Ltd. Laid down on 15 Sep. 1954, launched on 12 Jan. 55 and completed on 19 Mar. 1955.

A photograph of Teshio appears in the 1962-63 to 1965-66 editions.

Small Patrol Vessels-contd.

6 "Yahagi" Class

CHITOSE PS 56 HORONAI PS 59 SORACHI PS 57 SUMIDA PS 55

> 333·15 tons standard 375·7 tons normal $147\frac{1}{2}$ (pp.), $157\frac{1}{4}$ (w.i.)×24×7 $\frac{1}{4}$ feet (normal) 1—40 mm. AA. 2 sets diesels. B.H.P.: 1,400=15·5 kts. 4,000 miles at 12 kts. Displacement: Dimensions:

Guns: Machinery: Radius: Complement:

General
All built by Niigata Engineering Co. Ltd. Yahagi was laid down on 9 Dec. 1955, launched on 19 May 1956 and completed on 31 July 1956. Sumida was completed on 30 June 1957. Chitose was laid down on 20 Sep. 1957, launched on 24 Feb. 1958 and completed on 30 Apr. 1958. Sorachi was completed in Mar. 1959. Yubari was completed on 15 Mar. 1960. Horonal was completed on 4 Feb. 1961. A photograph of Yahagi appears in the 1959-60 and 1960-61 editions.



CHITOSE

1961, Official

YAHAGI PS 54 YUBARI PS 58

2 "Tokachi" Class

TOKACHI PS 51

TATSUTA PS 52

336 tons standard, 381 tons normal (Tokachi)
324 tons standard. 369 tons normal (Tatsuta)
157½ (pp.), 164 (w.l.), 170 (o.a.)×218×11½ feet
1—40 mm. AA.
2 sets of 4 cycle single acting diesels.
B.H.P.: 1,500=16 (max.), 12 kts. (service) (Tokachi)
1,400=15 (max.), 12 kts. (service) (Tatsuta)
3,824 miles at 12 kts. (Takachi)
3,930 miles at 12 kts. (Tatsuta)
37 Displacement: Dimensions: Guns: Machinery:

Radius: Complement:

General

Tokachi was built by Harima Dockyard, Kure. Laid down on 14 Nov. 1953, launched on 8 May 1954 and completed on 31 July 1954. Tatsuta was completed on 10 Sep. 1954. A photograph of Tatsuta appears in the 1955-56 to 1958-59 editions.



TOKACHI

1962, Japanese Maritime Safety Agency, Official

3 "Nagara" Class NAGARA PS 18 TONE PS 19

Displacement:

260 tons $131\frac{1}{2}\times23\times7\frac{1}{4}$ feet 1—40 mm. AA. 2 diesels. 2 shafts. B.H.P.: 800=13.5 kts. 2.000 miles at 12 kts. Guns: Machinery: Radius.

Complement: General

Improved versions of the "Kuma" class. All launched and completed in 1952.



NAGARA

1966. Elichi Aoki

KITAKAMI PS 20

KABASHIMA PS 100

I "Kabashima" Type

General Small patrol vessel displacing about 100 tons. Of this group Fujitaka, PS 151, and Hayabusa, PS 153, were officially deleted from the list in 1965, and Komadori, PS 152, in 1966.

Disposals
Of the "Kasasagi" class auxiliary submarine chasers, Oshidorl, Yamaseml and Kotaka were discarded in 1956. Kawasemi and Shigl in 1957, Hayabusa and Yamadorl in 1958. Kasasagi and Shirataka in 1959, Ugulsu, Tsugami, Hatsukari, Chitori, Uzura and Yamagara in 1960, Manaburu, Hibari Kamome and Aosagi in 1961, Hato and Hinazuru in 1962, and Hoojiro, Sekirel and Wakasagi in 1963.

Small Patrol Vessels—contd.

17 "Kuma" Class

KUMA	PS	01	SAGAMI	PS C	16	YOSHINO	PS	12
FUJI		02	OYODO	PS C	7	NOSHIRO	PS	13
TENRYU		03	ABUKUMA	PS 0	8	KISO	PS	14
ISUZU		04	KUZURYU	PS 0	9	SHINANO	PS	15
ISHIKARI	PS	0.5	KIKUCHI	PS 1		CHIKUGO	PS	16
			MOGAMI	PS 1		KUMANO	P\$	17
Displ	acem	ent:	258 tons standar	d, 27	5 tons	normai		

Displacement:
Dimensions:
Guns:
Machinery:
Radius:
Complement: 238 tons standard, 275 tons normal 122 (pp.), 126\frac{1}{2} (w.l.), 132\frac{1}{2} (o.a.)\times 23\times 7\frac{1}{2} feet 1—40 mm. AA.
2 sets diesels, B.H.P.; 800=13.6 kts, 2.000 miles at 12 kts.
35

Construction Construction

Kuma was built by Nihon Kokan Ltd., Tsurumi Dockyard, laid down on 29 Sep.

1950, launched on 12 Jan. 1951 and completed on 24 Mar. 1951.



MOGAMI

1966, Elichi Aoki

II "Kawachidori" Class

KAWACHIDORI HAMACHIDORI ASACHIDORI MIOCHIDORI	PS PS PS	102 103 104	TOMOCHIDORI SAWACHIDORI WAKACHIDORI	PS	107	MURACHIDORI ISOCHIDORI IWACHIDORI HARUCHIDORI	PS PS	109 111 114 115

300 $152\frac{1}{2}$ (o.a.) $\times 22\frac{1}{2} \times 7\frac{1}{2}$ feet 2 diesels, B.H.P.; 800=14 kts. 27 Displacement: Dimensions: Machinery: General Complement:

General
Former naval aircraft rescue vessels, now employed as local patrol vessels. PS 108 and 109 are of older, smaller and different type. A photograph of Hamachidori appears in the 1959-60 to 1963-64 editions. Namichidori, PS 110, and Sayochidori, PS 113, were officially deleted from the list in 1965, and Okichidori, PS 106 and Shimachidori, PS 112, in 1966.



ASACHIDORI

1964, Kohji Ishiwata

9 "Hidaka" Class

AKIYOSHI HIDAKA	PS 37 PS 32	KAMUI	PS 41 PS 38	TAKANAWA TAKATSUKI	PS 36
HIYAMA	PS 33	ROKKO	PS 35	TSURUGI	PS 39 PS 34

166.2 to 164.4 tons standard, 169.4 tons normal 100 (pp.). 111 (o.a.) \times 20 $\frac{1}{2}\times5\frac{1}{2}$ feet 1 set diesels. 1 shaft. B.H.P.: 690 to 700=13.5 kts. 1.100 miles at 12 kts. Displacement: Dimensions: Machinery: Radius:

Radius: 1,100 miles at 12 ks.

Construction

Hidaka was built by Azuma Shipbuilding Co., laid down on 4 Oct. 1961, launched on 2 Mar. 1962 and completed on 23 Apr. 1962. Both Hiyama and Tsurugi were competed in Mar. 1963 by Hitachi Shipbuilding Co. Kunimi was built under the 1964 fiscal year programme by Hayashikate Shipbuilding & Engineering Co., Shimoneseki, laid down on 15 Nov. 1964, launched on 19 Dec. 1964 and completed on 15 Feb. 1965. Three more local patrol ships were completed in 1965. A photograph of Hidaka appears in the 1963.64 to 1965-66 editions.



TSURUGI

1966. Elichi Aoki

Displacement. Dimensions: Machinery:

2 Special Rescue Type TSUKUBA PS 31 65 tons (Akagi 41-9 tons normal)

80½×21½×3¾ feet (Akagi 78½ (o.a.)×17½×3¼)

2 Niigata diesels, B.H.P.: 900—18 44 kts. (trials)
(Akagi 2 Mercedes Benz diesels, B.H.P.: 1,100=28 kts)
300 miles at 12 kts. (Akagi 260 miles at 28)

Radius; Akagi and Tsukubo (photograph in the 1963-64 to 1965-66 editions) were built by Hitachi Zosen, Kanagawa, and completed in 1965 and on 30 Mar. 1962 re-

PATROL CRAFT

	7 "Shii	nonome'', 7	"Hanayul	ki" Classes		
SHINONOME HATAGUMO	PC 30 PC 31	ASAGUMO NATSUGUMO	PC 34 PC 35	ISOYUKI MATSUYUKI	PC PC	
MAKIGUMO YAEGUMO	FC 32	TATSUGUMO	PC 36	SHIMAYUKI	PC	41
TAEGOMO	PC 33	MINEYUKI	PC 37 PC 38	TAMAYUKI NAMAYUKI	PC	

43 to 46 tons normal (Hanayuki 37 to 40) $69\times17\frac{1}{4}\times3\frac{1}{4}$ feet (Hatagumo, Makigumo, Shinonome, Displacement:

 $69\times174\times31$ teet (Hatagumo, Makigumo, Shinonome, Yaegumo) $69\times174\times31$ feet (Asagumo, Natsugumo, Tatsugumo) 68% (0.a.) $\times163\%\times31\%$ feet (Hanayuki, Mineyuki, Isoyuki, Matsuyuki, Shimayuki, Tamayuki, Namayuki) 2 diesels. B.H.P.: 1.400=21 kts. 2 diesels. B.H.P.: $1.000=18\cdot8$ kts. (Shinonome) 2 diesels. B.H.P.: 1.100=25 kts. (Hanayuki class) 9 to 10Machinery:

General Complement:

General Matsuyuki, Shimayuki, Tamayuki and Namayuki were completed in 1964-65, Isoyuki on 29 Feb. 1960, Hanayuki and Mineyuki in Mar. 1959, Asagumo on 15 Mar. 1955, Natsugumo on 31 Mar. 1955, Tatsugumo on 31 May 1955 and the others before Oct. 1954, Constructed of light alloy framework and wooden hulls.



HANAYUKI

1963, Official

HIRYU PC 109

Displacement: Dimensions: Machinery:

33.5 tons normal 71 $\frac{1}{2}$ (w.l.) \times 18 $\frac{1}{4}$ \times 4 $\frac{1}{2}$ feet 2 Packard engines. B.H.P.; 1,200=15 kts.

General
Former United States motor torpedo boats of the PT type which served in the U.S.
Navy in the Second World War. Built by Annapolis Yacht Yard Inc., Annapolis, Ind.,
in 1943. Acquired from the U.S.A. in 1957 and delivered to the Japanese Government. Converted to a patrol craft by Azuma Shipbuilding Co., Yokosuka, englnes
being replaced. Rated as an inshore patrol boat.



HIRYU

1963. Official

	24 "Hatsunami" Class		
HATSUNAMI PC 01 AYANAMI PC 02 ISONAMI PC 03 URANAMI PC 05 KYONAMI PC 06 TAMANAMI PC 07 SUZUNAMI PC 08	CHIYONAMI PC 09 HAYANAMI PC 10 HAYSUZUKI PC 11 HANAZUKI PC 12 KIYOZUKI FC 13 MOCHIZUKI PC 14 NHZUKI PC 15 SUZUTSUKI PC 16	TERUZUKI URAZUKI WAKAZUKI YAMAZUKI HARUZUKI NATSUZUKI AKIZUKI FUYUZUKI	PC 17 PC 18 PC 19 PC 20 PC 21 PC 22 PC 23 PC 24
Displacement: Dimensions: Machinery:	45 tons normal $75\frac{1}{2}$ (o.a,)× $15\frac{1}{8}$ × $3\frac{1}{8}$ feet 2 diesels. B.H.P.: $700=14$ kts.		

General

Rated as local patrol boats. Seaward defence patrol craft and small submarine-chaser type, A photograph of Suzutsuki appears in the 1953-54 to 1960-61 editions.



AYANAMI

1964, Japanese Maritime Safety Agency, Official

MUTSUKI PC 25

Displacement: Dimensions: Machinery:

83} (o.a.)×16×31 feet 2 diesels. B.H.P.; 1,000=15 kts.

A small general purpose vessel officially rated as a local craft.

SURVEYING VESSELS

TENYO HM 05

Displacement:

Dimensions:

 $\begin{array}{lll} 181 \;\; tons \\ 95{\times}19\frac{1}{4}{\times}9\frac{1}{4} \;\; feet \\ Diesels. \;\; B.H.P.: \;\; 230{=}10 \;\; kts. \\ 3,160 \;\; miles \;\; at \;\; 10 \;\; kts. \end{array}$ Machinery: Radius:

HM 04 HEIYO

Displacement: Dimensions:

69 tons $73\frac{1}{2}\times14\frac{1}{2}\times8$ feet Diesel, B.H.P.: 150=9 kts. 670 miles at 9 kts. Machinery:

Radius:

General eneral Completed by Shimuzu Dockyard of Nippon Steel Tube Co Ltd., in Mar. 1955. There are 21 other smaller vessels of HS type ranging from 5 to 8 tons displacement.

MEIYO HI U3

Displacement: Measurement: Dimensions:

486 tons normal 360 tons gross 133 (w.l.), 146 (o.g.,) \times 26½ \times 9½ feet 1 set diesels. B.H.P.: 700=12 kts. 4.500 miles at 10 kts. Machinery:

Radius:

Complement: 40

General

General
Built by Nagoya Shipbuilding & Engineering Co., Nagoya. Laid down on 14 Sep.
1962, launched on 22 Dec. 1962, and completed on 15 Mar. 1963. Controllable pitch propeller.
The former Melyo (HL 01) was discarded on 1 Mar. 1963 due to old age, and replaced by the new Melyo above.



1966, Elichi Aoki

TAKUYO HL 02

Approx. 880 tons standard, 930 tons normal 185 (pp.), $192\frac{1}{6}$ (w.l.) $\times 31\frac{1}{6} \times 10\frac{3}{3}$ feet (normal) 2 sets diesels. B.H.P.: 1,300=14 kts. (max.) 8,000 miles at 12 kts. Displacement: Dimensions: Machinery:

Built for the Maritime Safety Agency, by Niigata Engineering Co. Ltd. Laid down on 19 May 1956, launched on 19 Dec. 1956, and completed in March 1957, A photograph appears in the 1958-59 to 1964-65 editions

KAIYO HM 06

Displacement:

378 tons normal 132½ (w.l.), 146 (o.a.) \times 26½724 feet 1 set diesels. B.H.P.: 450=12 kts. 6,100 miles at 11 kts. Dimensions: Machinery:

General
Built by Nagoya Shipbuilding & Egnineering Co., Nagoya. Completed on 14 Mar.
1964. Rated as Medium Surveying Vessel. Controllable pitch propeller.



KAIYO

1965, Japanese Maritime Safety Agency, Official

COASTAL PATROL CRAFT

HARUSAME	CL 01	KAWAKAZE	CL 11	YUKIKAZE	CL 21
MURASAME	CL 02	TANIKAZE	CL 12	SHIMAKAZE	CL 22
SOYOKAZE	CL 03	HATSUKAZE	CL 13	YUKAZE	CL 23
SAWAKAZE	CL 04	ARAKAZE	CL 14	YODOKAZE	CL 24
OKIKAZE	CL 05	HARUKAZE	CL 15	ASAKAZE	CL 25
YAMAKAZE	CL 06	SACHIKAZE	CL 16	YAKAZE	CL 26
MINIKAZE	CL 07	HATAKAZE	CL 17	KIYOKAZE	CL 27
UMIKAZE	CL 08	MATSUKAZE	CL 18	IYOKAZE	CL 28
NOKAZE	CL 09	IWAKAZE	CL 19	FUSAKAZE	CL 29
NUMAKAZE	CL 10	NATSUKAZE	CL 20	TACHIKAZE	CL 30
				KOTOKAZE	CL 31

General Arakaze is constructed of light alloy, welding having been used for approx, 40 per cent of the hull; she was laid down on 11 Nov. 1953, launched on 11 Feb. 1954 and completed on 29 Mar. 1954. A photograph of Arakaze appears in the 1958-59 to 1964-65 editions and of Kawakaze in the 1953-54 to 1960-61 editions. The others are of wooden construction. Natsukaze was completed on 15 Feb. 1960. There are 34 other CLs, CL 101 to CL 157 for coastal patrol.

HARBOUR PATROL & SERVICE CRAFT

CS 01 to CS 58 (58 boats) and CS 102 to CS 126 (22 boats) for harbour patrol CR 01 to CR 18 (18 boats) and CR 51 for rescue service
CF 01 to CF 07 (7 boats) for fire-fighting service
There are also 15 miscelaneous boats.

TENDERS

WAKAKUSA LL 01

1,815 toms 204×32¼×19¼ feet H.P.: 1,850 Displacement: Dimensions: Machinery:

Built by Hitachi Innoshima Dockyard in Mar. 1946. Purchased from Osaka Shosen Kaisha, in Jan. 1956. Rated as Navigation Aid Vessel (Lighthouse Supply Ship). A photograph of Wakakusa appears in the 1958-59 to 1965-66 editions.

GINGA LL 12

HOKUTO LL 11

Displacement: Dimensions: Machinery:

500 tons $128\frac{2}{3}\times31\frac{1}{6}\times13\frac{5}{8}$ feet 2 diesels. B.H.P.: 420=11·26 kts. 2,800 miles at 10 kts.

Radius: General

The above three are not sister ships. The above particulars refer to Ginga which was built by Osaka Shipbuilding Co. Ltd. Laid down on 11 Nov. 1953, launched on 6 May 1954 and completed on 30 June 1954. Equipped with 15 ton derrick for laying buoys. Rated as Navigation Aid Vessels (Buoy Tenders). A photograph of Ginga appears in the 1955-56 to 1964-65 editions, There are also 7 LMs (LM 101 to LM 109) and 15 boats for miscellaneous service.



HOKUTO

1964, Kohji Ishiwata

KAIO LL 13

KENVA

The Kenya Navy, which is based in Mombasa, was inaugurated on 12. Dec. 1964, the first anniversary of Kenya's independence. Commander, Kenya Navy: Commander E. M. C. Walker.

SEAWARD DEFENCE BOAT

I British "Ford" Class

NYATI (ex-H.M.S. Aberford)

Displacement:

120 tons standard (160 tons full load) 110 (pp.), $117\frac{1}{7}$ (o.a.) \times 20 \times 5 feet 1.—40 mm. Bofors AA. Davey Paxman diesels, B.H.P. 1,100=18 kts. Dimensions: Guns: Machinery:

Transferred on loan from Great Britain in 1946. A startboard bow view of Nyati appears in the 1965-66 edition.



NYATI

Machinery:

1966, Kenya Navy, Official

STMBA

COASTAL PATROL CRAFT

3 New Construction

NDOVU CHUI

Displacement; Dimensions; 96 tons standard (109 tons full load)
95 (w.l.), 103 (o.a.)×19½×5½ feet
2—40 mm. Bofors AA. Guns:

Paxman Ventura diesels. B.H.P.: 2,800=24 kts. 1,500 nautical miles at economical speed. 23 (3 officers and 20 ratings) Radius: Complement:

General

General
Ordered from Vosper Limited, Portsmouth, on 28 Oct. 1964 for delivery in mid1966. Simba was launched on 9 Sep. 1965 and completed on 23 May 1966.
Chul handed over 7 July 1966, Ndovu handed over 27 July 1966, Scheduled arrival at Mombasa Oct. 1966. Chul means Leopard, Ndovu means Elephant, Simba means Lion.



SIMBA

1966, courtesy Vosper Ltd., Portsmouth, Builders

KOREA

Administration

Chief of Naval Operations: Vice-Admiral Lee, Maeng Ki.

Vice Chief of Naval Operations: Rear-Admiral Ham, Myong Su.

Commander-in-Chief of Fleet: Rear Admiral Hyun, Si Hak. Naval Attaché in London: Colonel loong Bo Kim.

Naval Attaché in Washington: Captain Tae Young Shin.

Personnel

1966: 16,600 (2,300 officers, 14,300 men)

Mercantile Marine

Lloyd's Register of Shipping: 74 vessels of 128,999 tons gross

DESTROYER

CHUNG MU (ex-U.S.S. Erben, DD 631)

Displacement:

I Ex-U.S. "Fletcher" Type

2,100 tons standard (3,050 tons

full load) $376\frac{1}{2}$ (o.a.) $\times 39\frac{1}{2} \times 18$ (max.) Dimensions:

Guns:

feet
5—5 inch, 38 cal. d.p.; 6—40
mm. Bofors AA.
5—21 inch (quintupled)
2 fixed Hedgehogs; 1 D.C. rack;
2 side laurching torpedo racks
2 G.E. geared turbines. 2 shafts.
5.H.P.; 60,000=35 kts,
4 Babcock & Wilcox
650 tons Tubes: A/S weapons: Machinery:

Boilers: 650 tons 6,000 miles at 15 kts. 300 Oil fuel: Radius: Complement:

Transfer Former United States destroyer of the "Fletcher" class, transferred to Korea in May 1963 and renamed. Pennant No. DD 91

Builders Bath Iron Works Corpn., Bath, Maine

Laid down 28 Oct. 1942

Launched 21 Mar. 1943

Combleted 28 May 1943



CHUNG MU

1964, Korean Navy, Official

FRIGATES

I Ex-U.S. "Rudderow" Type Destroyer Escort

1,450 tons standard (2,230 tons Displacement:

full load) Dimensions: $(o.a.) \times 36\% \times 14$ (max.)

feet Gune:

A/S weapo Machinery: /S weapons:

feet 2—5 inch, 38 cal.; 2—40 mm. AA., 6—20 mm. AA. D.C.T. G.E. geared turbines. Turboelectric propulsion 2 shafts. S.H.P.: 12,000=24 kts. 2 Combustion Engineering type 378 tons 5,000 miles at 15 kts, 186 (6 officers 180 men) Oil fuel:

Radius: Complement:

Former United States destroyer escort of the "Rud-derow" class transferred to Korea at Seattle, Washington, on 16 June 1963 and renamed.

CHUNG NAM (ex-U.S.S. Holt. DE 706)

Pennant No. DE 73 Bay City

Builders Launched Defoe Shipbuilding Co., 15 Dec. 1943

Completed 9 June 1944



CHUNG NAM

1964, Korean Navy, Official

2 Ex-U.S. "Bostwick" Type Destroyer Escorts

1,240 tons standard (1,900 tons Displacement: fuli load) 306 (o.a.)×36§×14 (max.) Dimensions:

306 (o.d.) / Sugara (o.d.) / S Guns: Machinery:

Oil fuel:

Radius: Complement:

General

Former American destroyer escorts, DE, of the "Bost-wick class. Transferred from the United States Navy at Boston in 1956 under the Mutual Defence Assistance Programme. The 3-21 inch torpedo tubes originally mounted were removed. Named after Korean States.

Photographs A photograph of Kang Won appears in the 1958-59 to 1962-63 editions. KANG WON (ex-U.S.S. Sutton, DE 771) KYONG KI (ex-U.S.S. Muir, DE 770)

Pennant No. DE 72 DE 71

Builders Tampa S.B. Co. Tampa S.B. Co.

Launched 6 Aug. 1944 4 June 1944 Completed 22 Dec. 1944 20 Aug. 1944



KIONG KI

1963, Korean Navy, Official

Frigates—contd.

	(ex-U.S.S. Sausalito, PF 4)	
	(ex-U.S.S. Muskogee, PF 49) IG (ex-U.S.S. Hoquiam, PF 5)	
TAE DO	NG (ex-U.S.S. Tacoma, PF 3)	

ennan	t No.
PF	61
PF	65
PF	63
PF	66

Builders Consolidated Steel Corpn. Permanente Metals Corpn. Permanente Metals Corpn. Kaiser Cargo Inc.

Laid down 18 Sep. 1943 10 Apr. 1943 10 Mar. 1943 7 Apr. 1943 Apr. 1943

18 Oct. 1943 31 July 1943 7 July 1943 20 July

Completed 16 Mar. 1944 8 May 1944 6 Nov. 1944 4 Mar. 1944

4 Ex-U.S. "Tacoma" Type

Displacement: 1,430 tons standard (2,415 tons full load)
Dimensions: 304 (0,a.)×37½×13⅔ feet
Guns: 3—3 inch, 50 cal. d.p., 2—40 mm., 9—20 mm. AA.

Machinery: Triple expansion 2 shafts. 1.H.P.: 5,500=18 kts.

Boilers:

645 tons Oil fuel: Radius: Complement: 9,500 miles at 12 kts. 180

General
Former U.S. patrol vessels (frigates) PF, of the "Tacoma" class. Transferred to the U.S.S.R, under the Lend-Lease scheme during the Second World War, Returned to the U.S. after hostilities and laid up at Yokosuka naval base, Reactivated on the outbreak of the Korean War. The first pair were loamed to the Korean Navy and commissioned on 5 Nov. 1950. The second pair were transferred on 8 Oct. 1951 at Yokosuka, Apnok, ex-U.S.S. Rockford (PF 48) in collision General



TAE DONG

1963, Korean Navy, Official

on 21 May 1952 was decommissioned, returned to the U.S.N. and expended as a target in 1953. She was replaced by *imchin*.

Photographs A photograph of Duman appears in the 1958-59 to 1962-63 editions.

FAST TRANSPORTS

Ex-HARRY L. CORL, APD 108, ex-DE 598 (1 Mar. 1944) Ex-JULIUS A. RAVEN, APD 110, ex-DE 600 (3 Mar. 1944) KYONG NAM APD 81 (ex-U.S.S. Cavallero, APD 128, ex-DE 712)

Displacement: Dimensions: Guns:

1,400 tons standard (2,130 tons full load)
300 (w.l.), 306 (o.a.)×37×12½ feet
1—5 inch, 38 cal. d.p., 6—40 mm, AA.
G. E. turbines with electric drive. 2 shafts, S.H.P.:
12,000=23 kts.
2 "D" Express
350 tons
5,500 miles at 15 kts.
210 plus 162 troops

Machinery: Boilers:

Oil fuel: Radius: Complement:

General
Former United States high speed transports, APD, modified destroyer escorts.

Kyong Nam was built by the Defoe Shipbuilding Co., Bay City, Mich. Laid down on 28 Mar. 1944, Launched on 15 June 1944. Completed on 13 Mar. 1945. Transferred in 1959. The other two were transferred in 1966.



KYONG NAM

1961, Korean Navy, Official

ESCORT VESSELS

8 Ex-U.S. "180 ft." Steel PCE Type

HAN SAN PCEC 53 (ex-U.S.S. PCEC MYONG RYANG PCEC 52 (ex-U.S.S. EC 896) OK PO PCEC 55 (ex-U.S.S. PCEC 898)

RO RYANG PCEC 51 (ex-U.S.S. PCEC 882)
RYUL PO PEC 58 (ex-U.S.S. Somerset, PCE 892) PCE 892.)

SA CHON PCE 59 (ex-U.S.S. Batesburg, PCE 903)

TANG PO PCE 56 (ex-U.S.S. Maria, PCE 842)

PYOK PA PCE 57 (ex-U.S.S. S.S. Dania, PCE **870**) Displacement:

640 tons standard (967 tons full load) 180 (w.l.), 184½ (o.a.)×33½×10 (max.) feet 1—3 inch, 50 cal., d.p.; 3—40 mm. AA.; 8—20 mm. ÀΑ

Machinery: Diesels. 2 shafts. B.H.P.: 2,000=14·3 kts. sea speed 260 tons 4,300 miles at 10 kts. Oil fuel: Radius:

Complement: 104

Dimensions: Guns:

General
Former United States patrol vessels, escorts, PCE (four were later redesignated control escorts, PCEC, on assignment to amphibious forces). Built in 1942-45 by Albina Engine and Machine Works, Portland, Oregon (Han San, Pyok Pa, Ro Ryang), Pullman Standard Car Manufacturing Co. Chicago., Ill. (Tang Po). and Willamette Iron & Steel Corp., Portland, Oregon (Myong Ryang, Ok Po, Ryul Po, Sa Chan), Transferred from the United States Navy in Feb. 1955 (Myong Ryang, Ro Ryang), on loan, in 1956 (Han San, Ok Po) and 1961 (Pyok Pa, Ryul Po, Sa Chon, Tang Po). A photograph of Han San appears in the 1959-60 editions.



Escort Vessels—continued

I Ex-U.S. "Auk" Class MSF Type

SHIN SONG PCE 1001 (ex-U.s.S. Ptarmigan, MSF 376)

Displacement: Dimensions:

Guns:

Tubes: A/S weapons: Machinery:

890 tons standard (1,250 tons full load)
215 (w.l.), 221 (o.a.)×32½×10½ (max.) feet
2—3 inch, 50 cal. d.p. (single); 4—40 mm. AA. (2
twin); 4—20 mm. AA. (2 pairs)
3—21 inch (pyramided)
4 D.C.T. (single); 2 D.C. tracks
2 G.M. diesel electric. 2 shafts, B.H.P.: 3,532=18 kts,
117 total accommodation

Complement:

General
Former United States steel-hulled fleet minesweeper. Built by the Savannah
Machinery & Foundry Co. Laid down on 9 Mar. 1944, launched on 15 July 1944
and completed on 15 Jan. 1945, Transferred from the U.S. to the Republic of Korea
Navy on 25 July 1963 at Seattle, Washington. Employed as a patrol escort ship (PCE).



SHIN SONG

1964, Korean Navy, Official

PATROL VESSELS

4 Ex-U.S. "173 ft." Steel PC Type

KUM CHONG SAN PC 708 (ex-U.S.S. Grosse Point. PC 1546)
MYO HYANG SAN PC 706 (ex-PC 600)
O TAE SAN PC 707 (ex-U.S.S. Winnemucca, PC 1145)
SOL AK PC 709 (ex-U.S.S. Chadron, PC 564)

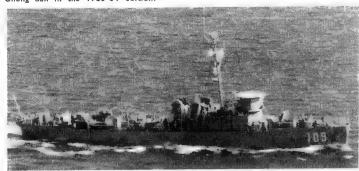
280 toms standard (450 tons full load)
170 (w.l.), 173\(\frac{1}{2}\) (o.a.)\\(\colon\)23\\(\colon\)10\(\frac{1}{4}\) (max.) feet
1\(-3\) inch, 50 cal., d.p.: 1\(-40\) mm. AA.; 4\(-20\) mm.
2 ASW rocket launchers, mousetrap
Diesels. 2 shafts. B.H.P.; 2,880\(-20\) kts. Displacement: Dimensions: Guns: A/S weapons: Machinery: Complement:

General

SOL AK

General Former United States submarine chasers, PC, of steel construction built in 1941-42. Kum Chong San and O Tae San were transferred on loan at Seattle on 21 Nov. 1960 and 1 Nov. 1960, respectively. Pak Tu San, PC 701 (ex-Ensign Whitehead, ex-PC 823), Kum Kang San, PC 702 (ex-PC 810) and Sam Kak San, PC 703 (ex-PC 802) were decommissioned on 21 Aug. 1960 and scrapped. Chirisan PC 704, was mined and sank off Wonson, Korea, on 26 Dec. 1951, Han Ra San, PC 705 (ex-U.S.\$. PC 485) was sunk in a typhoon at Guam in Nov. 1962 and although raised was scrapped in 1964. Sol Ak (ex-U.S.\$. Chadron) was transferred at Guam on 22 Jan. 1964.

A photograph of Myo Hyang San appears in the 1957-58 edition, and Kum Chong San in the 1963-64 edition.



1964, Korean Navy, Official

Patrol Vessels-contd.

2 Ex-U.S. "136ft." Wooden PCS Type

KUM SEONG PCS 202 (ex-PCS 1445) HWA SEONG PCS 205 (ex-PCS 1448)

Displacement: Dimensions: Guns: Machinery:

251 tons standard (338 tons full load) 130 (w.j.), 136 (o.g.) \times 24½ \times 8½ feet 1—40 mm. 2—20 mm.

2 General Motors diesels. 2 shafts, B.H.P.: 800=14 kts.

General
Former United States Submarine Chasers of the PCS type, of wooden construction, built in 1943-44 Acquired by Korea in 1952. Kaesong PC\$ 504, Kilchu, PCS 514 (ex-YMS of same numbers) used as gunboats, were de-commissioned in 1955-56. Suseong PCS 201 (ex-U.S.S. PCS 1426) was returned to the U.S. in Apr. 1963. Mok Seong PCS 203 (ex-U.S.S. PCS 1446) was transferred to the Hydrographic Office of the Ministry of Transport in Jan. 1964.



SUSFONG

1962, Korean Navy, Official

COASTAL MINESWEEPERS

6 Ex-U.S. MSC Type

HA DONG MSC 527 (ex-MSC 296)
KO HUNG MSC 523 (ex-MSC 285)
KUM SAN MSC 525 (ex-MSC 284)
NAM YANG MSC 526 (ex-MSC 295)

Displacement: Dimensions: Guns: Machinery:

320 tons standard (370 tons full load)
138 (pp.), 144 (o.a.)×28×9 (max.) feet
2—20 mm, AA.
2 shafts, B.H.P.: 1,200=14 kts.
43

General Complement:

General

Coastal mirresweepers, MSC of the United States "Bluebird" class specially built by the U.S.A. for foreign transfer under the Military Aid Program. Ko Hung and Kum San were transferred from the U.S. Navy to the Korean Navy in 1959, followed by Kum Kuk, transferred at Long Beach, California, on 10 Nov. 1959. Ha Dong and Nam Yang were transferred to the Koream Navy at Boston, Mass. on 16 Nov. 1963 and 7 Oct. 1963, respectively. Both were built by Petersen Builders, Inc., Sturgeon Bay, Wisc, MSC 302 is building in U.S. for transfer to Korea under MAP. Minesweeping Boat Minesweeping Boot

MSB 2 was transferred from the U.S. Navy to the Korean Navy on 1 Dec. 1961.



KUM KOK

1961, Korean Navy, Official

5 Ex-U.S. YMS Type

KUM HWA MSC(O) 519 (ex-U.S.S. Curlew, ex-MSC(O) 8, ex-YMS 218)
KIM PO MSC(O) 520 (ex-U.S.S. Kite, ex-MSC(O) 22, ex-AMS 22, ex-YMS 369)
KOCHANG MSC(O) 521 (ex-U.S.S. Mockingbird, ex-MSC(O) 22, ex-YMS 419)
KWANG CHE MSC(O) 503
KIM CHON MSC(O) 513

Displacement: Dimensions: Guns: Machinery: Complement:

270 tons standard (350 tons full load) 136 (a.a.)×24½×8 (max.) feet 1—40 mm., 50 cal., 2—20 mm. AA, Diesels. B.H.P.: 1,000=15 kts,

General Former United States auxiliary motor minesweepers of wooden construction, built in 1941-42. All ex-YMS type, Kum Hwa, Kim Po and Kochang were transferred from the U.S. Navy in 1956, Kang Jin, MSC(O) 501, Kang Nung, (MSCO(O) 507, and Ka Ryang, MSC(O) 515 were decommissioned on 15 July 1959, 30 July 1959, and 30 May 1959, respectively, Kyong Chu, MSC(O) 502 was decommissioned on 10 May 1962. Kang Kyong MSC(O) 510 vias scrapped in 1964.



KOCHANG

1959, Korean Navy, Official

TANK LANDING SHIPS

Ex-U.S. LST Type

UN BONG LST 807 (ex-U.S.S. LST 11/PE

UN BONG LST 807 (ex-U.S.S. LST 1010)

DUK BONG LST 808 (ex-LST 227)

BI BONG LST 809 (ex-U.S.S. LST 218)

KAE BONG LST 810 (ex-U.S.S. Berkshire County, LST 288)

WEE BONG LST 812 (ex-U.S.S. Johnson County LST 819)

Displacement: 1/552 900)

Displacement: 1,653 tons standard, 2,366 tons beaching (4,080 tons

1,653 tons standard, 2,366 tons beaching (4, full joad)
316 (w.l.) ,328 (o.a.)×50×14 (max.) feet
7—40 mm, AA., 6—20 mm. AA.
Diesel, 2 shafts. B.H.P.: 1,700=11 kts.
2,100 tons Dimensions: Guns: Machinery: Cargo capacity: Complement: 113

General

General

Former United States Tank Landing Ships. Duk Bong and Un Bong were transferred on 22 Mar. 1955 at S. Diego. Kae Bong was transferred on 5 May 1956 at Seattle, one mounts 10—40 mm. guns and 8—20 mm. guns. Buk Han, Su Yong and Wee Bong were transferred on 2 Dec. 1958, 22 Dec. 1958 and 13 Jan. 1959, respectively, at Seattle, and Hwa San was transferred on 30 Oct. 1958 at Long Beach.



SU YONG

1962, Korean Navy, Official

ROCKET LANDING SHIP

I Ex-U.S. LSMR Type

SI HUNG LSMR 311 (ex-U.S.S. St. Joseph River, LSMR 527)

Displacement: 1,102 tons standard (1,280 tons full load)

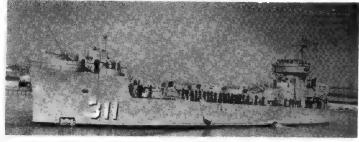
Dimensions: 203½ (o.a.)×34½×8½ (max.) feet

Guns: 1—5 inch, 2—40 mm. AA., 2—20 mm. AA., 8—5 inch

rocket projectors
Diesels. 2 shafts. B.H.P.: 2,800=13 kts. Machinery:

Complement: 142

Transferred to Republic of Korea Navy at San Diego, California, on 15 Sep. 1960. Si Hung means "The Beginning of Prosperity."



SI HUNG

KU MOON

1961, Korean Navy, Official

MEDIUM LANDING SHIPS

II Ex-U.S. LSM Type

BIYOUP LSM 607 (ex-U.S.S. LSM 96)
KA DUK LSM 605 (ex-U.S.S.LSM 462)
KI RIN LSM 610 (ex-U.S.S.LSM 19)
KU MOON LSM 606 (ex-U.S.S.LSM 30)
ULRYUNG LSM 613 (ex-U.S.S.LSM 37)
VEUNG RA LSM 611 (ex-U.S.S.LSM 84)
SIN-MI LSM 612 (ex-U.S.S. LSM 316)

743 tons beaching (1,095 tons full load)
196\(\frac{1}{2}\) (w.l), 203\(\frac{1}{2}\) (o.a.)\(\times 34\)\(\frac{1}{2}\)\(\times 8\)\(\frac{1}{2}\) (max.) feet
1—40 mm. AA.: 4—20 mm. AA,
Diesels, direct drive. 2 shafts. B.H.P.: 2,880=12.5 kts. Displacement: Dimensions: Guns: Machinery: Complement: General

General
On loan from the United States. LSM 19, 30, 54, 84 and 96 were transferred to the Korean Navy at Seale in 1956. LSM 19, 84 transferred on 3 July 1956. LSM 17 on 18 Oct. 1956, LSM 316 on 18 Nov. 1956, Pun Do, (LSM(F) 608 has been converted into a Mine Force Flagship. Dok Do, LSM 603 (ex-U.S.S.LSM 419) was decommissioned on 26 Feb. 1963.
Of the former United States Support Landing Ships Large, LSSL, ex-LCS(L) type, LSSL 107 (ex-LSSL 77) and LSSL 108 (ex-LSSL 91), employed as gunboats, were decommissioned on 15 Nov. 1960. Chung Jin, LSSL 105 (ex-U.S.S. LSSL 1056) was scrapped in 1962, and Po Song Man, LSSL 109 (ex-U.S.S.LSSL 54) and Yong II Man, LSSL 110 (ex-U.S.S. 86) were decommissioned on 31 Oct. 1962.



1963, Korean Navy, Official

MOTOR TORPEDO BOATS

2 Ex-U.S. PT Type

KALAMAEKI PT 23 (ex-PT 616)

KIROKI PT 25 (ex-PT 619)

Displacement: Dimensions:

33 tons standard (56 tons full load)

Machinery:

80½×20½×5 feet 1—40 mm., 2—20 mm., 8 M.G. 4 torpedo launching racks Packard. 3 shafts. B.H.P.: 4,050=41 kts. (designed)

Complement:

General
Former United States Navy motor torpedo boats of plywood hull construction built
by the Electric Boat Co., Bayonne. N.J., in 1945. Transferred to the Republic of
Korea Navy in Jan. 1952. Olpamei PT 26 (ex-U.S.S. PT 613) was destroyed in Sep.
1952 while on loan. Jebi PT 27 (ex-U.S.S. PT 620) was scrapped in 1964.



IEBI

1959, Korean Navy, Official

LANDING CRAFT REPAIR SHIP

DUK SOO (ex-U.S.S. Minotaur, ARL 15, ex-LST 645)

Displacement: Dimensions:

Machinery:

2,366 tons standard (4,100 tons full load)
316 (w.l.), 328 (o.a.)×50×11½ feet
2-40 mm. AA.
G.M. diesels. 2 shafts. B.H.P.: 1,800=11·5 kts.

Complement:

Former United States landing craft repair ship. Built by Chicago Bridge & Iron Co. Seneca, Del. Laid down on 20 June 1944. Launched on 20 Sep. 1944. Completed on 30 Sep. 1944.



DUK SOO

1963, Korean Navy, Official

SUPPLY SHIPS

KIMHAE AKL 902 KUN SAN AKL 908 (ex-U.S.S. Sharps, AKL 10)

WAEKWAN AKL 903 MA SAN AKL 909 (ex-U.S.S. AKL 35)
MOCK PO AKL 907 (ex-U.S.C.G.C. Trillium,

Displacement: Dimensions: Guns: Machinery:

Complement:

179 (o.a.)×32×10 (max.) feet 1—40 mm, AA., 2—20 mm, AA. Diesel, 2 shafts, S.H.P.: 1,000=13 kts. 43 (for AKL 902) and 49 (for AKL 907, 908 and 909)

General AKL 35 was transferred from the U.S.A. on 6 Sep. 1956, Kun San on 3 Apr. 1956, Ma San on 9 Sep. 1956, and Mack Po in 1956. Ex-U.S. Army FS craft.

OILERS

CHUN-JI (ex-Birk) AO 2

PUJON (ex-Hassel) AO 3

Displacement: Measurement: 1,400 tons standard (4,160 tons full load)
2,257 and 2,256 tons gross respectively
275 (pp.)×44½×18½ feet
1—40 mm, AA., 2—20 mm, AA.

Dimensions:

Guns: Complement:

General Former Norwegian tankers. Both built by A/S Berken Mek. Verks Bergen, Norway, in 1951, Taken over by Korean Navy at Rotterdam, Sep. and July 1953, respectively.

Displacement:

KU RYONG YO 1, ex-YO 106 (ex-U.S.S. YO 118)

Dimensions: Machinery:

428 tons standard (1,126 tons full load) 174 (0.a.) \times 33 \times 13 (max.) feet Union diesel. 1 shaft. S.N.P.: 500=7 kts.

Complement:

Former U.S. self-propelled fuel oil barge. Transferred to Korea on 3 Dec. 1946.

HWA CHON YO 5 (ex-Pack Yeon, AO 5, ex-U.S.S. Derrick, YO 59)

Displacement: Dimensions:

Guns: Machinery: 893 tons standard (2,700 tons full load)
236 (o.a.)×38×15 (max.) feet
3—20 mm. AA.
Fairbanks-Morse diesel. 1 shaft. B.H.P.: 1,150=10·5 kts.

Complement:

Former self-propelled fuel oil barge. Loaned to Korea on 14 Oct. 1955.

TUGS

DO BONG ATA 3 (ex-U.S.S. Pinola, ATA 206) YONG MUN ATA 2 (ex-U.S.S. Keosanqua, ATA 198)

Displacement: Dimensions:

538 tons standard (838 tons full load)
134½ (w.l.), 143 (o.a.)×34×13½ (max.) feet
G.M. diesel-electric. 1 shaft, H.P.: 1,500=13·5 kts.

General
Former United States auxiliary ocean tugs of the "Maricopa" class, ATA type. Built by Gulfport Boiler and Welding Works, Inc., Port Arthur, Texas (Do Bong) and Levingston Shipbuilding Co., Orange, in 1944-45. Transferred on 2 Jan. 1962.

KOREA (NORTH)

Personnel

Estimated at 9,000 total (800 officers and 8,200 men in June 1966.)

MINESWEEPERS

2 Ex-U.S.S.R. "T" Type

Displacement:

540 tons 200 (o.a.)×23×8 feet

the U.S.S.R.

Fleet minesweepers of the "T" class received by the North Korean Navy from

8 Ex-U.S.S.R. "Fugas" Type

Displacement: Dimensions:

440 tons standard (550 tons full load) 203½ (o.a.)×233½×8 feet 1.—3.9 inch; 1.—37 mm. AA. Diesels, 2 shafts. B.H.P.: 2,800=18 kts.

Guns

Former Soviet minesweepers of the "Fugas" class built in 1935-42. Fitted for minelaying.



"Fugas" Class

Added 1964, Ziro Kimata

SUBMARINE CHASERS

2 Ex-U.S.S.R. "Artillerist" Type

Displacement:

Dimensions: Guns: A/S weapons:

Machinery:

240 tons standard (280 tons full load) $160\frac{3}{2} \times 19 \times 6\frac{3}{2}$ feet $1-3\cdot9$ inch, 2-37 mm, AA. 2 depth charge throwers Diesels. 2 shafts, B.H.P.; 3,300=22 kts.

General

WAK 170)

Former Soviet patrol vessels or coastal escorts of the "Artillerist" class rated as submarine chasers. Built in 1943.

2 New Construction

Displacement:

circa 160 tons Length 125 feet

General Two fast submarine chasers of medium size are reported to be under construction for the North Korean Navy,

10 Patrol Type

Displacement: Dimensions:

circa 130 tons Length: 100 feet

General

ium hulls.

Small craft of the patrol type for seaward defence and local duties, rated as sub-

3 Ex-U.S.S.R. "MO I" Type

Displacement: Dimensions:

50 tons 85½×13×4½ feet 2—13 mm. AA. M.G.

2-13 mm. AA. M.G. 2 petrol engines. 2 shafts. B.H.P.: 1,300

Former Soviet motor launches transferred by the U.S.S.R. in 1954. Rated as submarine chasers.

MOTOR TORPEDO BOATS

21 Ex-U.S.S.R. "P 4" Type

Displacement: Dimensions: Guns:

50 tons $85\frac{1}{2}\times20\times6$ feet 4-25 mm. AA. Diesels. B.H.P.; 2,000=42 kts.

Machinery:

Former Soviet motor torpedo boats of the "P4" class. Built in 1951-57. Alumin-

MINESWEEPING BOATS

20 Inshore Type

Displacement: Dimensions:

20 tons Length: 50 feet

General

Very small minesweeping craft for inshore, coastal, estuarial and general utility,

LEBANON PATROL BOATS

TARABLOUS

Displacement: Dimensions: Guns:

105 tons standard $124\frac{2}{3} \times 18 \times 5\frac{3}{4}$ feet 2—40 mm.

-40 mm. Mercedes-Benz diesels. 2 shafts. B.H.P.: 2,700=27 kts. Machinery:

Radius Complement:

1,500 miles 19 (3 officers, 16 men)

Construction
Tarabious was built by Ch. Navals de l'Estérel. Laid down in June 1958, Launched in June 1959. Completed in1959.

3 "Biblos" Class

BIBLOS

SIDON

TIR

Displacement: Dimensions; Guns:

28 tons standard $66\times13\frac{1}{2}\times4$ feet 1—20 mm. AA., 2 M.G. General Motors diesels. 2 shafts, B.H.P.: $530=18\cdot5$ kts. Machinery:

Construction
French built ML type craft. Built by Ch. Navals de l'Estérel, Launched in 1954-55.

Ex-LCU 1474



1960, Captain Aldo Fraccaroll

LANDING CRAFT

Ex-LCU 1474

BIBLOS

Displacement: Dimensions: Guns:

180 tons standard (360 tons full load)
115×34×6 feet
2—20 .mm. AA.
3 diesels. 3 shafts, B.H.P.: 675=10 kts.

Machinery:

General

Former United States utility landing craft built in 1957, transferred in Nov. 1958.

LIBERIA

The small naval service or coast guard has about 200 officers and men.

Mercantile Marine

Lloyd's Register of Shipping: 1,287 vessels of 17,539,462 tons gross.

MOTOR GUNBOAT

PGM 69

Displacement: Dimensions:

Guns: Machinery: 100 tons 95 (o.a.)×19×5 feet 1—40 mm, AA, 4 diesels, 2 shafts, B.H.P.: 2,200=21 kts.

Complement:

Construction Being built in the United States for transfer under the Military Aid Programme,

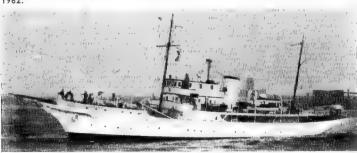
PRESIDENTIAL YACHT

LIBERIAN (ex-Virginia)

Measurement: Dimensions:

742 tons (Thames), 692:27 tons gross, 341:6 tons net. 173 (w.l.), 209 (o.a.)×29 $\frac{1}{3}$ ×13 $\frac{1}{3}$ feet

General Motor yacht of 742 tons (yacht measurement) built in 1930 by William Beardmore & Co. Ltd., Dalmuir. Purchased by Liberia for use as the Presidential yacht in 1957. (Her previous owners were the Trustees of the Estate of the late Viscount Camrose.) Extensively refitted by Cammell Laird & Co. Ltd., Birkenhead, at the end of



LIBERIAN

1964. Official

ML 4002

PATROL BOATS

Displacement: Dimensions:

Guns: Machinery: 11'5 tons 40\frac{1}{2} (o.a.)\times 11\frac{1}{2}\times 3\frac{1}{2} feet 2 M.G. 2 G.M. diesels. 2 shafts. B.H.P.: 380=23 (max.) kts.

General Coastguard cutters built at the United States Coast Guard Yard, Curtis Bay, Mary-

land, presented by the U.S.A., and transferred during 1957.

A photograph of ML 4002 appears in the 1957-58 to 1965-66 editions.

LIBYA

The Royal Libyan Navy was established in Nov. 1962 when a British Naval Mission was formed and first recruits were trained at H.M.S. St. Angelo, Malta. Cadets are being trained at the Britannia Royal Naval College, Dartmouth, and technical ratings at H.M.S. Sultan, Gosport, and H.M.S. Collingood, Fareham, England, Officers and ratings are also being trained at the Nautical Schools in Greece.

Head of the Armed Forces of Libya: General Nuri es Sadik Senior Officer, Royal Libyan Navy: Lieutenant-Commander

Mansur Bader, R.L.N.

Head of the British Naval Mission: Captain W. J. Woolley, R.N.

CORVETTE New Construction

TOBRUK

Displacement: Dimensions: Guns: Machinery:

Displacement:

1 140 v Constitution
160 (pp.), 177 (o.a.)×28½×13 feet
1—4 inch, 4—40 mm. AA. (single)
2 Paxman Ventura 16 YJCM diesels. 2 shafts. B.H.P.;
3,800=18 kts.
2,900 miles at 14 kts.

63 (5 officers and 58 ratings)

Radius: Complement:

General
Designed and built by Vosper Limited, Portsmouth, in association with Vickers Limited. Launched on 29 July 1965, completed on 30 Mar. 1966, commissioned for service at Portsmouth on 20 Apr. 1966, sailed for Libya on 30 May 1966 and arrived in Tripoli on 15 June 1966. A gun corvette fitted with surface warning radar, Vosper roll damping fins and air-conditioning. Duties for which she was designed include protection of shipping from air and sea attack, training officers and men of the Royal Libyan Navy, and State visiting. A suite of State apartments is included in the accommodation.



INSHORE MINESWEEPERS

2 British "Ham" Type

Ex-H.M.S. GREETHAM

120 tors standard (159 tons full load) 100 (pp.), 106 (o.a.) $\times 21\frac{1}{6}\times 5\frac{1}{2}$ feet 1—20 mm. AA. 2 Paxman diesels. B.H.P.: 1,100=14 kts. Dimensions: Guns: Machinery: Complement: 2 Paxmar 15 to 22

General

General
Lent by Great Britain in 1963 to form the nucleus of a navy for Libya, and given outright to the Royal Libyan Navy in 1966.
There are also three fast patrol launches for customs and fishery protection, see full particulars in the 1963-64 and 1964-65 editions.



GREETHAM

1965, A. & J. Pavla

Ex-H.M.S. HARPHAM



HARPHAM

1965, A. & J. Pavla

FAST PATROL BOATS

3 New Construction

Displacement: Dimensions: Machinery:

95 tons standard (114 tons full load)
90 (pp.), 96 (w.l.), 99 (o.a.)×25½×7 feet
3 gas turbines. 3 shafts, B.H.P.: 12,750=54 kts.

General The intention to order these three fast patrol boats from Vosper Limited, Portsmouth, England, was declared in July 1966. They will be generally similar to the motor torpedo boats designed and built by Vosper for the Royal Danish

It is reported there are four river squadrons of small gunboats and landing craft.

MALAYSIA

Chief of the Naval Staff:

Commodore Allen Nelson Dollard, D.S.C.,

The names of Malaysian warships are prefixed by K.D. (Kapal Diraja) = Royal Ship

Military Adviser in London: Colonel Mohamed Noor, K.M.N., M.B.E.

FRIGATES

I New Construction, Yarrow Type

Displacement: Guns:

1,600 tons 308 (o.a.)×34×143 feet 1—4.5 inch; 2—40 mm. Bofors

Guided weapons: A/S weapons: Aircraft:

Machinery:

AA.

1 quadruple Seacat

1 three-barrelled mortar

1 helicopter

1 Brissol Siddeley "Olympus" gas turbine. S.H.P.: 19,500

1 Crossley Pielstick diesel.

B.H.P.: 3,850. Twin screw.

Complement: 140

General An order was placed with Yarrow & Co. Ltd., Scotstoun, Glasgow, on 11 Feb. 1966 for a general purpose frigate. A long range vessel of a new design developed by Yarrow, resulting in a low cost naval ship with a armament-displacement ratio superior to that



NEW FRIGATE (Model)

1966, Yarrow & Co., Ltd., Scotstoun, Glasgow

of any comparable warship. The ship is fully auto-matic with a consequent saving in complement.

Sheduled to be ready for delivery in 1969. Cost estimated at £4,000,000

I Ex-British "Loch" Class

Displacement:

1,575 tons standard (2,400 tons

Dimensions:

1,373 (co.)
286 (pp.), 297½ (w.l.), 307 (o.a.)×38½×14¾ (max.) feet
2 4 inch; 8—40 mm. Bofors

Guns-A/S weapons:

AA. 2 Squid triple-barrelled depth

Machinery:

Boilers: Radius:

2 aguin triple-parrelled depth charge mortars Triple expansion. 2 shafts. I.H.P.: 5,500=19:5 kts, 2 Admiralty 3-drum type 9,500 miles at 12 kts,

Complement: 140

General

General
Former British Frigate of the "Loch" class (AntiSubmarine Type). On transfer to he Royal Malaysian
Navy she was refitted with a helicopter landing deck,
air-conditioned throughout, modern radar, and extra
accommodation, in H.M. Dockyard, Portsmouth, from
whence she sailed for Singapore on 12 Nov. 1964. Nomenclature

Hang Tuch is the name of a Malay Admiral and war-rior in the 15th century.

HANG TUAH (ex-H.M.S. Loch Insh)

Laid down Pennant No. Builders Launched Combleted F 433 Henry Robb Ltd., Leith 17 Nov. 1943 10 May 1944 20 Oct. 1944



HANG TUAH

1966, Wright & Logan

COASTAL MINESWEEPERS

6 Ex-British "Ton" Class

BRINCHANG (ex-H.M.S. Thankerton)
JERAI (ex-H.M.S. Dijston)
KINABALU (ex-H.M.S. Essington)

LEDANG (ex-H.M.S. Hexton)
MAHAMIRU (ex-H.M.S. Darlass
TAHAN (ex-H.M.S. Lullington) Darlaston)

Displacement; Dimensions: Guns:

360 tons standard (425 tons full load)
140 (pp.), 152 (o.a.)×28½×8½ feet
1—40 mm, Bofors AA. forward; 2—20 mm, AA. aft.
Diesels. 2 shafts. B.H.P.: 2,500=15 kts. (max.)
45 tons
39

Machinery: Oil fuel:

Complement:

General

General
Coastal minesweepers of the "Ton" class, Mahamiru was transferred from the Royal Navy in 1960 under the Defence Agreement, Ledang was refitted at H.M. Dockyard, Chatham before transfer, and was commissioned and sailed for Malaysia in Oct, 1963. Jeral and Kinabalu were refitted in Great Britain and arrived in Malaysia in summer 1964. Brinchang and Tohan were refitted in Singapore and transferred to the Royal Malaysian Navy in May and Apr. 1966, respectively.

A photograph of Jeral appears in the 1964-65 and 1965-66 editions.

INSHORE MINESWEEPERS 6 Ex-British "Ham" Class SRI PERLIS (ex-H.M.S. Asheldham) (ex-H.M.S. Boreham)

IERONG LANGKA SUKA (ex-H.M.S. Bedi SRI JOHOR (ex-H.M.S. Altham) Displacement:

TEMASEK (ex-H.M.S. Brantingham)
TODAK (ex-H.M.S. Felmersham)

Dimensions: Guns:

120 tons standard (159 tons full load)
100 (pp.), 106 ½ (a.a.)×21½×5½ feet
1—40 mm. Bofors AA. forward; 2—20 mm. Oerlikon
AA. aft (see Gunnery notes)
2 Paxman diesels. B.H.P.: 1,100=14 kts. (max.)

2 Paxman 15 tons Machinery: Oil fuel: 22 Complement:

General

General "Ham" class, M 2601 Series. Four were transferred from Great Britain and renamed in 1958 (Langka Suka and Temasek) and 1959 (Sri Johar and Sri Perlis). Two more were refitted in Singapore and commissioned into the Royal Malaysian Navy in Jan. (Jerong) and Mar. (Todak) 1966.

As a temporary measure all have been armed with one 40 mm. AA, gun forward and two single 20 mm. AA, guns aft instead of sweeping gear.

A photograph of Temasek (with sweeping gear) appears in the 1961-62 to 1964-65 editions.



MAHAMIRU

1966, Royal Malaysian Navy, Official



LEDANG

1964, courtesy Mr. Michael D. J. Lennon



SRI PERLIS (sweeping gear aft, gun forward) 1962, Royal Malaysian Navy, Official



SRI JOHOR (guns instead of sweeping gear) 1961, Royal Malaysian Navy, Official

FAST PATROL BOATS

4 New Construction. "Perkasa" Class

GEMPITA Displacement: Dimensions:

PENDEKAR

HANDALAN

95 tons standard (114 tons full load)
90 (pp.), 96 (w.l.), 99 (o.a.)×25½×7 feet
2—40 mm. Bofors AA.
4—21 inch (side)
3 Bristol Siddeley Proteus gas turbines. 3 shafts.
B.H.P.: 12,750=54 kts.
G.M. diesels on wing shafts for cruising=10 kts. Guns. Tubes: Machinery:

General

General

The design is a combination of the "Brave" class hull form and "Ferocity" type construction. Ordered from Vosper Limited, Portsmouth, England, on 22 Oct. 1964. Generally Similar to the motor torpedo boats built by Vosper for the Royal Danish Navy. They can also operate in the gunboat role or a minelaying role. Perkasa (Valiant) was launched on 26 Oct. 1965, Handalan (Reliant) on 18 Jan. 1966, Gempita (Thunderer) on 6 Apr. 1966, and Pendekar (Champion) on 24 June 1966, The hull is entirely of glued wooden construction, with upperworks of aluminium alloy. Rover gas turbine electrical generator sets. Equipment includes full air conditioning. Decca radar, and comprehensive navigation and communications system. Perkasa and Hardalan will be shipped to Malaysia in late 1966 and Gempita and Pendekar in 1967.



PERKASA

1966, courtesy Vosper Limited, Portsmouth, Builders

PATROL CRAFT

6 "Sri Kedah" Class

SRI KEDAH P 3138 SRI KELANTAN P 3142

SRI PAHANG P 3141 SRI PERAK P 3140

SRI SELANGOR P 3139 SRI TRENGGANU P 3143

4 + 14 "Sri Sabah" Class

BADEK BELADAU FUNDANG KELEWANG KERAMBIT

LEMBING PANAH RENCHONG RENTAKA SERAMPANG SRI JOHOR

SRI MELAKA P 3147 SRI NEGRI SEMBILAN P 3146 SRI PERLIS SRI SABAH P 3144 SRI SARAWAK P 3145 TOMBAK

Displacement: Dimensions:

96 tons standard (109 tons full load)
95 (w.l.), 103 (o.a.)×19½×5½ feet
2—40 mm., 70 cal, Bofors AA.
2 Bristol Siddeley Maybach MD 655/18 diesels, B.H.P.:
3,500=27 kts, (max.)
1,400 (Sri Sabah class 1,660) miles at 14 kts.
22 (3 officers, 19 ratings)

Radius: Complement:

General

General

The contract between Vosper Ltd., Portsmouth, and the Malaysian Government for six boats, the "Sri Kedah" class, was announced on 14 Sep. 1961. The first Sri Kedah, was launched on 4 June 1962 and commissioned on 6 Feb. 1963. Sri Selangor was launched on 17 July 1962. Sri Trengganu on 12 Dec. 1962 and Sri Kelantan on 8 Jam. 1963. All were in service with the Royal Malaysian Navy by the end of 1963. Of prefabricated steel construction, they are fitted with Vosper roll damping fins and are equipped with Decca true motion radar. Four additional craft of improved design, the "Sri Sabah" class, were ordered in 1963. Sri Sabah was launched on 30 Dec. 1963. Sri Sarawak on 20 Jan. 1964, Sri Negri Sembilian on 17 Feb. 1964 and Sri Mekala on 25 Feb. 1964. All arrived in Malaysia by Jan. 1965. Fourteen more of a modified "Sri Sabah" class with more modern equipment were ordered from Vosper in July 1965, of which the fifth boat, Tombak (Spear) was launched on 20 June 1966, four having been launched earlier, without ceremony and unnamed. The first two are expected to be shipped to Malaysia at the end of 1966, a further eight in 1967 and the remaining four in 1968.

A photograph of Sri Kedah appears in the 1963-64 to 1965-66 editions, and of Srl Pahang in the 1964-65 and 1965-66 editions.



SRI PERAK

General

1964, Wright & Logan

SDML 3502 (ex- Sri Trengganu, ex-SDML 3502)

Displacement: Dimensions:

46 tons standard (54 tons full load)
72 (o.a.)×16×5; feet
2—20 mm. Oerlikon AA.
2 Gardner diesels. 2 shafts, B.H.P.: 320=12 kts.

General
Former British harbour defence motor launch (HDML) later known as seaward defence motor launch (SDML). Of the original seven craft of this type Sri Kedah (ex-SDML 3501) was scrapped in 1959, and Sri Selangor (ex-SDML 1509) in 1961, SDML 3505 (ex-Sri Pohang, ex-SDML 3505) and SDML 3508 (ex-Sri Kelantan, ex-SDML 3508) in 1965. SDML 3506 (ex-Sri Negrl Sembilan, ex-SDML 3506) and SDML 3507 (ex-Sri Perak, ex-SDML 3507) were offered for sale in 1966. These motor launches all reverted to their numbers in turn as the new patrol craft (see above) took their names.

TRAINING TENDER

PANGLIMA P 48

PERKASA

Displacement: Dimensions:

119 tons standard (131 tons full load)
117 (o.a.)×20×6 feet
1—40 mm. 60 cal. Bofors forward
Paxman YHAXM supercharged B 12 diesels=14 kts. Guns: Oil fuel:

15 tons15 (as necessary for training) Complement:

General Built by United Engineers, Singapore. Laid down in 1954. Launched on 14 Jan. 1956. Accepted by the Singapore Government in May 1956. Transferred to the Royal Malaysian Navy on the formation of Malaysia. Training Tender for RMNVR but from 1965 in full commission with the RMN. Her dimensions and layout are reminiscent of those of the British seaward defence boats of the "Ford" class.



PANGLIMA

1964. Royal Malaysian Navy. Official

DESPATCH AND SURVEY VESSEL

MUTIARA P 3504

Displacement: 98 (o.g.)×19×51 feet 1—20 mm. Oerlikon AA. 2 Thornycroft diesels, B.H.P.: 200=12 kts. 16 (2 officers and 14 ratings) Dimensions: Guns: Machinery: Complement:

A general purpose vessel intended for despatch, surveying and patrol duties, Designed and built at the Singapore shipyard of John I. Thornycroft & Co., Ltd. First vessel specially constructed for the Royal Malaysian Navy, the earlier ships having been acquired from the Royal Navy. Launched on 17 Jan 1961. Named on 20 May 1961 and commissioned as K.D. Mutiara (meaning Pearl).



MUTIARA

General

1962, Royal Malaysian Navy, Official

TANK LANDING CRAFT

SRI LANGKAWI (ex-H.M.S. Counterguard, ex-LCT (8) 4043)

Displacement: Dimensions: Machinery: 657 tons <code>light</code> (1,000 tons <code>loaded</code>) 225 (<code>pp.</code>), 231½ (<code>o.a.</code>) \times 39 \times 3½ (fore), 5 (aft) feet 4 Paxman engines. B.H.P.: 1,840=12·6 kts. 37

Complement:

General
Former British tank landing craft of the LCT (8) type, Acquired by the Royal
Malaysian Navy in 1965 and refitted in Malta for tropical service,



SRI LANGKAWI

1966, Royal Malaysian Navy, Official

Minor Landing Craft
Five LCM (6) 55½ tons, 56 feet overall, 2—20 mm. guns, 2 diesels B.H.P. 460=9
kts., were built in Australia in 1965-66.
Fifteen LCP, 18½ tons, 48 feet overall, 14 feet beam machine guns, 2 Cummins B.H.P. 400=16 kts. were built to an Australian design in 1965-66. Disposals

Disposals

The landing craft Sri Perlis (ex-H.M.S. Pelandok, ex-LGC(L) 450), and the trawler type controlled minelayer Sri Johor (ex-H.M.S. Penyu, ex-H.M.S. Dabchick, ex-Thorney, were paid off in 1959 and sold. The maintenance repair craft MRC 1401 (ex-Sri Melaka, ex-H.M.M.S. Majaya, ex-MRC 1401, ex-LCT (E) 341) is used to berth ships while the Malaysian Jetty is awaiting completion.

MEXICO

Administration

Secretary of the Navy:
Admiral Antonio Vazquez del Mercado.

Under-Secretary of the Navy: Vice-Admiral Antonio J. Aznar Zetina. Commander-in-Chief of the Navy: Vice-Admiral Jorge Lang Islas.

Chief of the Naval Staff:

Rear Admiral Federico Romero Ceballos.

Director of Services:

Rear-Admiral Jesus Beltran Ramirez.

Personnel

1966: Total 11,127 (2,327 officers and 8,800 men including marines.

Mercantile Marine

Lloyd's Register of Shipping: 90 vessels of 268,583 tons gross

FRIGATES

Name	rennant	Duliders	Laid down	Launchea	Compreted
CALIFORNIA (ex-U.S.S. Belet, APD 109, ex-DE 599) PAPALOAPAN (ex-U.S.S. Earhart, APD 113, ex-DE 603) TEHUANTEPEC (ex-U.S.S. Joseph M. Auman, APD 117, ex-DE 7 USUMACINTA (ex-U.S.S. Don O, Woods, APD 118, ex-DE 721)	B 4 (ex-H 4) (4)B 5 (ex-H 5)	Bethlehem S.B. Co., Hingham, Mass. Bethlehem S.B. Co., Hingham, Mass. Consolidated Steel Co., Orange, Texas Consolidated Steel Co., Orange, Texas	20 Mar. 1945 8 Nov. 1943	12 May 1945 5 Feb. 1944	26 July 1945 25 Apr. 1945

4 Ex-U.S. "Rudderow" Class Rated as Fragatas Transportes

Displacement:

1,400 tons standard (2,130 tons

Dimensions:

1,400 tons standard \(\(\)_1,100 \)
full |load\)
300 (w.l.), 306 (o.a.)\(\times 37 \times 12 \)
12\(\)_2 feet
1—5 inch, 38 cal. d.p.; 6—40 mm, AA. (3 twin); 6—20 mm.
G.E. turbo-electric, 2 shafts.
S.H.P.: 12,000=23.6 kts.
2 "D" Express
350 tons

Machinery:

Boilers: Oil fuel: Radius:

Complement:

2 "D" Express 350 tons 5.500 miles at 15 kts. 204 plus 162 troops

General
Former United States destroyer escorts of the
"Rudderow" class converted and rated as high speed
transports (APD) in the U.S. Navy. Purchased by
Mexico in May and June 1964. They replaced the four
frigates of the ex-U.S. "Tacoma" type, bearing the
same names. which were stricken for disposal in June
and Aug. 1964.



PAPALOAPAN

1966, Mexican Navy, Official

I "Durango" Type Rated as Transporte de Guerra

Displacement:

Dimensions:

1,600 tons standard (2,000 tons full load) 282 (pp.), 303 (o.a.)×40×10

Guns: Machinery: 282 (pp.), 303 (o.d.)×40×10 feet 2—4 inch, 2—57 mm., 2—25 mm. AA. (twin) 4—20 mm. Parsons geared turbines. 2 shafts. S.H.P.: 6,500=20 kts. designed (19 kts. sea speed) 2 Yarrow 400 tons

Boilers: Oil fuel: Radius: Complement:

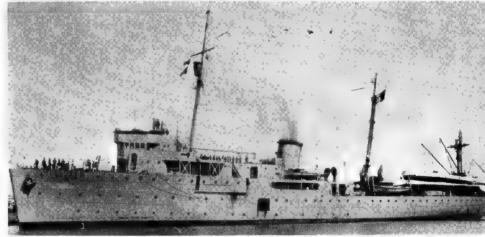
400 tons 3,000 miles at 15 kts. 140

DURANGO

Pennant No.: B-1 (ex-128)

Builders: Union Navai de Levante Velancia

Launched: 28 June 1935 Completed: 1936



DURANGO

1966. Mexican Navv. Official

General
Designed primarily as an armed transport with accommodation for 20 officers, 450 men and 80 horses.
Carries a lighter armament than the three cañoneros of the "Guanajuato" class (see below) which besides their troop carrying and transport capacity are equivalent to frigates in many ways. Durango replaced Zaragoza as a Training ship in Mar. 1964.

3 "Guanajuato" Class

Rated as Cañoneros (Gunboats)

Displacement:

1,300 tons standard (1,950 tons

Dimensions:

Machinery:

1,300 tons standard (1,950 tons full load)
264 (o.a.)×37½×10 feet
3—4 inch (single); 6—20 mm.
AA. (single)
2 Enterprise DMR-38 diesels.
2 shafts. B.H.P.: 5,000=14 kts. cruising speed (see Engineering)
140 tons

Oil fuel: Complement:

140

Officially classified as gunboats (cafioneros), but can be used as transports with berths for 120 troops.

Engineering

The Parsons geared turbines (2 shafts. S.H.P.: 5,000 = 19 kts.) and Yarrow boilers installed when originally built in 1934 were replaced with two diesels each of 2,500 B.H.P.: Ouerétaro in 1958, Potosi in 1961, and Cuspalinate in 1944. Guanajuato in 1964.

Pennants
Former pennant numbers: Querétaro H 9 (ex-43);
Potosi H 8 (ex-44).

Photographs

Photograph of Querétaro appear in the 1944-45 to 1962-63 editions and in the 1964-65 and 1965-66

GUANAJUATO POTOSI OLIERETARO

Pennant

Sociedad Español de Construction Naval, Ferrol Sociedad Español de Construction Naval, Matagorda, Cadiz Sociedad Español de Construction Naval, Ferrol

Builders

29 May 1934 24 Aug. 1934 29 June 1934

Launched



POTOSI

1966, Mexican Navy, Official

ESCORT MINESWEEPERS

20 Ex-U.S. MSF Type (Rated as Dragaminas)

Name	Pennant	Ex-U.S. No	ame & No.	Name	Pennant	Ex-U.S. Name	& No.
DM-01 DM-02 DM-03 DM-04 DM-05	D-1 D-2 D-3 D-4 D-5	Jubilant Hilarity Execute Facility Scuffle	255 241 232 233 298	DM-11 DM-12 DM-13 DM-14 DM-15	E-1 E-2 E-3 E-4 E-5	Device Ransom Knave Rebel Crag	220 283 256 284 214 223
DM-06 DM-07 DM-08 DM-09 DM-10	D-6 D-7 D-8 D-9 D-0	Eager Recruit Success Scout Instill	224 285 310 296 252	DM-16 DM-17 DM-18 DM-19 DM-20	E-6 E-7 E-8 E-9 E-0	Dour Diploma Invade Intrigue Harlequin	221 254 253 365

650 tons standard (945 tons full load)
180 (w.l.), 184\frac{1}{2} (o.a.)\times33\times10 feet
1-3 inch, 50 cal d.p.; 4-40 mm. AA.
2 diesels. 2 shafts. B.H.P.: 1,710=15 kts.
104 Displacement: Displacement: Guns: Machinery: Complement:

General
Former United States steel-hulled "180-ft." fleet minesweepers of the "Admirable" class, MSF, ex-AM type. All completed in 1943-44. Transferred by the U.S.A. to Mexico, being received at Orange, Texas, on 2 Oct. 1962. Of the twenty vessels ten are designated dragaminas for minesweeping duties, with D pennant numbers, and ten are designated escoltas for escort and general purpose duties with E pennant numbers.



DM 11

1966, Mexican Navy, Official



DM 16

1966, Mexican Navy, Official





DM 19

Mexican Navy, Official

ESCORT

I Ex-U.S. PCE Type (Rated as Corbeta)

TOMAS MARIN (ex-PCE 875) C 3

600 tons standard (903 tons full load) 180 (w.l.), $184\frac{1}{2}$ (o.a.) $\times 33\frac{1}{12}\times 9\frac{1}{4}$ feet 1.—3 inch, 50 cal., 6—40 mm. AA. (3 twin), 4—20 mm. AA. (single) 2 D.C.T. G.M. diesel, 2 shafts, B.H.P.: 1,800=16 kts. designed Displacement: Dimensions: Guns: A/S weapons: Machinery: (15 kts. sea speed) Complement: 80

General

Sole survivor of five former United States patrol vessels of the PCE type, all completed in 1943-44 and purchased from the United States Navy in 1947.

Disposals
Sister ship Blass Godinez (ex-PCE 871) C 2, David Porter (ex-PCE 847) C 4, Pedro Sainz de Baranda (ex-PCE 844) C 1, and Virgilio Uribe (ex-PCE 868) C 5 were scrapped in 1965.



TOMAS MARIN

1966, Mexican Navy, Official

PATROL VESSELS

I Ex-U.S. PC Type (Rated as Guardacostas)

GC 38 (ex-U.S.S. PC 1210) G 8

280 tons standard (450 tons full load)
170 (w.l.), 173\frac{2}{3} (o.a.)\times 23\times 11 feet
1—3 inch, 2—20 mm, AA,
4 D.C.T.
2 diesels, 2 shafts, B.H.P.: 2,880=19 kts, Displacement: Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Oil fuel: 60 tons 5.000 miles at 10 kts. Radius:

General Sole survivor of nine former United States submarine chasers of the "173-ft" steel PC type, launched in 1942-44, completed in the U.S.A. in 1942-45, and purchased as surplus in the United States in 1952. Cruising speed 10 kts. A photograph of GC 30 appears in the 1953-54 to 1963-64 editions.

GC 35

Disposals

Of this class GC 31 (ex-U.S.S. PC 820), GC 32 (ex-U.S.S. PC 608), GC 34 (ex-U.S.S. PC 794) and GC 36 (ex-U.S.S. PC 1224) were officially deleted from the list in Mar. 1964 for scrapping, and GC 30 (ex-U.S.S. PC 820), GC 33 (ex-U.S.S. PC 813), GC 35 (ex-U.S.S. PC 824) and GC 37 (ex-U.S.S. PC 819) were scrapped in 1966.

In 1966.

Of the nine patrol vessels of the "G 20" class, G 29 was scrapped in 1952. G 20, G 21, G 23, G 26 and G 27 in 1954, G 22 and G 35 in 1956, and G 28 in 1966.



1964, Official

PATROL BOATS

2 "Azueta" Class

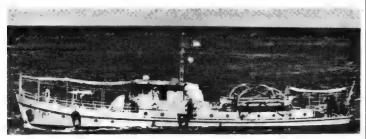
AZUETA G 9

VILLAPANDO G 6

Displacement: Dimensions:

80 tons standard 85×16×7 feet 2—13·2 mm. AA. (twin) Superior motors. B.H.P.: 600=12 kts. Guns: Machinery:

General
Small patrol craft of all steel construction built at Astilleros de Tampico in 1959 and 1960, respectively.



VILLALPANDO

1966, Mexican Navy, Official



AZUETA

Mexican Navy, Official

I "Polimar" Type

POLIMAR (Pennant No. G 1)

Displacement:

Dimensions: Machinery:

57 tons standard 67 feet 2 diesels. B.H.P.: 456=16 kts.

Small patrol craft of steel construction built at Astilleros de Tampico in 1961. Ehtered service on 1 Oct. 1962.

5 River Type

AM 4

AM 5

AM 6

AM 7

AM 8

Displacement:

35 tons

Machinery:

Diesel, Speed=10 kts,

General

River patrol craft of steel construction. Built in Tampico and Veracruz, Entered service from 1960 to 1962.

TRANSPORT

I Ulua Type

ZACATECAS (Pennant No. B 2)

Displacement:

780 tons standard

Dimensions: Guns: Machinery: Complement:

158×27½×9 feet 1—40 mm. AA., 2—20 mm. AA. (single) 1 MAN diesel. H.P.: 560=10 kts. 50 (13 officers and 37 men)

General

nerai Built at Ulua Shipyard, Veracruz. Launched in 1959. Cargo ship type. The hull is welded steel construction.



ZACATECAS

1966, Mexican Navy, Official

SURVEY SHIP

I Higgins Type

SOTAVENTO (Pennant No. A 1)

Displacement: Dimensions: Machinery:

300 tons standard (400 tons full load) $165\frac{1}{2}\times28\times10$ feet Diesels. B.H.P.: 1,800=17 kts.

Built by Higgins, New Orleans. Launched in 1947. Handsome, symmetrical and low-lying. Streamlined, with truncated funnel. Air conditioned and equipped with radar. Formerly the Presidential Yacht, but officially reclassified as Buque Hidrografico in 1966.

Disposal of Yacht Training Ship

sposal of Facht Irdining Ship The training Ship The training ship Zaragoza (ex-Orizaba, ex-Southern Cross, ex-Rover), former esidential Yacht, was officially stricken from the Navy List for disposal in Mar. 164, and was replaced as Training Ship by the frigate transport Durango.



SOTAVENTO

Mexican Navy, Official

OILERS

I Ex-U.S. YOG Type

AGUASCALIENTES (ex-YOG 6) Pennant No. 1 5

Displacement: Dimensions: Machinery: Capacity: Complement:

440 tons (1,480 tons full load)
174½ (o.a.)×33×11½ (max.) feet
Union diesel direct B.H.P.: 500=8 kts.
6,570 barrels
26 (5 officers and 21 ratings)

General Former United States self-propelled fuel oil barge, district craft. Built by Geo. H. Mathis Co. Ltd., Camden, N.J. in 1943. Purchased by Mexico in 1964. Entered service in Nov. 1964.

I Ex-U.S. YO Type

TLAXCALA (ex-YO 107) Pennant No. I 6

Displacement: Dimensions: Machinery: Capacity: Complement:

440 tons (1,800 tons full load) $174\frac{1}{2}$ (o.a.) $\times 33 \times 11\frac{3}{4}$ (max.) feet Union diesel direct B.H.P.: 500=8 kts. 6,570 barrels 26 (5 officers and 21 ratings)

General

Former United States self-propelled fuel oil barge, district craft. Built by Geo. wler & Son, Neponset, Mass., in 1943. Transferred by sale in 1964 by U.S. Lawler & Son, Neponset, Mas Entered service in Nov. 1964.



TLAXCALA

1966, Mexican Navy, Official

Disposals

The six landing craft of the U.S. LCT (LCU) type were officially deleted from the Navy List in 1966.

The auxilliary ocean tug of the U.S. "Maricopa" class, Sotoyomo (ex-U.S.S. ATA 121), loaned to Mexico under MAP, was removed from the list in 1966, as were Nereida, former patrol boat adapted as a tug and fire fighting craft, and three small tugs.

North Atlantic Treaty Organisation (NATO) Naval Forces are:-FEDERAL REPUBLIC, BELGIUM. DENMARK. GERMAN CANADA. NETHERLANDS, NORWAY. PORTUGAL, ITALY, KINGDOM, UNITED STATES. TURKEY. UNITED

(France withdraw from NATO on 1 July 1966)

In June 1964 NATO nations jointly manned the U.S. guided missile destroyer Biddle, the selected mixed-manned trials ship. Total 20 officers and 316 men. This was a trial for the then proposed multi-lateral force of 25 merchant type ships fitted with Polaris missiles and manned by mixed NATO nation craws. Biddle was renamed Claude V. Ricketts (see U.S. section) on 28 July 1964.

The 18-months duration mixed-manned crew was disbanded in Dec. 1965, having accomplished its feasibility test.

MOROCCO

FRIGATE

AL MOUNA (ex-La Surprise, ex-H.M.S. Torridge)

Builders Blyth Dry Docks & Ship-building Co.

Laid down 17 Oct. 1942

Launched 16 Aug. 1943 Completed 6 Apr. 1944

1,450 tons standard (2.150 tons Displacement: full load) $301\frac{1}{3}$ (pp.), $305\frac{2}{3}$ (o.a.)×36 $\frac{1}{4}$ ×12 feet Dimensions: 2—4·1 inch; 3—40 mm, AA. 1 Hedgehog: 4 D.C.T.: 2 D.C. Guns: A/S weapons: Machinery: Triple expansion. 2 shafts, I.H.P.: Boilers:

7,700 miles at 12 kts. 123 (10 officers, 113 men) Oil fuel: Radius: Complement:

Originally a British frigate of the "River" class, purchased by France in 1944. Sold to Morocco in June 1964 when she was converted as flagship and Royal yacht by Chantiers Dubigeon at Brest. Accepted on 5 Mar. 1965.



AL MOUNA (before conversion)

Wright & Logan

CORVETTE (Aviso)

EL LAHIQ (ex-Chamois, ex-Annamite)

647 tons standard (920 tons full load)
257×28½×10½ feet
2—4·1 inch, 1—40 mm. AA., 4—20 mm. AA.
Sulzer diesels. 2 shafts. B.H.P.: 4,000=20 k Displacement: Dimensions: Guns: Machinery: Oil fuel: 100 tons 10,000 miles at 9 kts., 5,200 miles at 15 kts. 81 (6 officers, 75 men) Radius: Complement:

Former French aviso of the early "Chamois" class. Built as Annamite by Lorient Dockyard. Laid down in Apr. 1938, launched on 17 June 1939, and completed in Feb. 1940. Renamed Chamois in 1953. Transferred from the French Navy to the Moroccan Navy on 7 Nov. 1961 and renamed El Lahlq. Sister ship of Dustur (ex-Chevreull) in the Tunisian Navy.



FL LAHIO (before transfer)

French Navy, Official

SEAWARD PATROL CRAFT (Vedette de Port)

ES SABIQ (ex-P 762, VC 12)

Displacement: tons standard (82 tons full load) Dimensions: Guns:

, 3 cons standard (82 tons full load) $104\frac{1}{2}\times15\frac{1}{4}\times5\frac{1}{2}$ feet 2—20 mm. AA. Mercedes-Benz diesels. 2 shafts B.H.P.: 2,700=28 kts. 1,500 miles at 15 kts. Machinery:

Complement:

Former French seaward defence motor launch of the VC type, Built by Chantiers Navals d'Estérel. Launched on 13 Aug. 1957. Completed in 1958. Transferred from the French Navy to the Moroccan Navy on 15 Nov. 1960 and renamed Es Sabiq.

UTILITY LANDING CRAFT

LIEUTENANT MALGHAGH

Displacement: Dimensions: 292 tons light (642 tons full load) $193\frac{1}{2}\times39\frac{1}{4}\times4\frac{1}{2}$ feet 2—20 mm. AA. 2-20 mm. AA. 2 MGO diesels. 2 shafts. B.H.P.: 1,000=8 kts. Guns: Machinery:

Complement:

General
Ordered early in 1963 from the Chantiers Navals Franco-Belges and completed in
1964, Similar to the French landing craft of the EDIC type built at the same yard.



LIEUTENANT MALGHAGH

1965, courtesy Admiral M. Adam

PATROL VESSELS (Escorteur Cotier)

I New Construction

125 tons light (154 tons full load) 124\(\frac{2}{3}\) (pp.), 133\(\frac{1}{3}\) (o.a.)\(\times 20\)\(\frac{2}{3}\times 4\)\(\frac{2}{3}\) feet AA, and M.G. Displacement: Dimensions: 1249 (pp.), 1352 (0.0.)×204×49 feet
AA, and M.G.
2 SEMT-Pielstick diesels. 2 shafts. B.H.P.: 3,600=
25 kts.
21 tons
2,000 miles at 15 kts. Guns: Machinery: Oil fuel:

Oil fuel Radius; General Ordered in 1964 from Constructions Méchaniques de Normandie,, Cherbourg, but laying down postponed pending review of design.

LIEUTENANT RIFFI

Displacement: Dimensions: Guns: A/S weapons: Machinery:

325 tons standard (374 tons full load)
170 (w.l.), 173\(\frac{1}{2}\) (o.a.)\(\times 2.3 \times 6\(\frac{1}{2}\) feet
1—3 inch d.p., 2—40 mm. AA.
2 ASM mortars, 1 D.C. rack
SEMT-Pielstick diesels. 2 shafts. B.H.P.: 3,600=19 kts,
3,000 miles at 12 kts. 2,000 miles at 15 kts.
59 (4 officers, 55 men) Radius:

Complement:

General A new patrol vessel of an improved "Fourgueux" class, PT type, Ordered by the Moroccan Navy from Constructions Mécaniques de Normandie, Cherbourg, Laid down in May 1963. Variable pitch propellers.

Disposals The patrol vessel Agadir (ex-French Gaumier, ex-U.S.S. PC 545) was stricken from the Moroccan Navy List in Dec. 1964 and returned to the French Navy as Q 390 in 1965 for disposal.

MADAGASCAR

The République Malgache became an independent state on 26 lune 1960.

PATROL VESSELS

I New Construction

235 tons light 155½ (o.a.)×21 feet 2 MGO diesels Displacement: Dimensions: Machinery:

General Ordered by the French Navy to be built by Chantiers Navals Franco-Belges for delivery to Madagascar. Patrol craft similar to seaward defence boat.

TANAMASOANDRO (ex-Marjolaine, ex-D 337, ex-YMS 69)

280 tons standard (325 tons full load)
134\\\24\\\2\) 12 feet
1-3 inch, d.p. 2-20 mm, AA., 2 M.G.
2 diesels. 2 shafts, B.H.P.: 1,000=15 kts. Displacement: Dimensions: Guns: Machinery: 36 tons 3,000 miles at 10 kts. Oil fuel;

Radius:

Former French patrol vesel, ex-coastal minesweeper of the U.S. YMS type, transferred from the French Navy to the new@Malgache Navy at Diego Suarez on 18 Feb. 1961 and name changed from Marjalaine to Tanamasoandro (which means Sunray).

MAILAKA (ex-P 758, VC 8)

75 tons standard (82 tons full load)
104½×15½×5½ feet
2—20 mm, AA.
Mercedes-Benz diesels. 2 shafts, B.H.P.; 2,700=28 kts.
1.500 miles at 15 kts. Displacement: Dimensions: Guns: Machinery:

Radius: Complement:

Former French seaward defence motor launch of the VC Type. Built by the Constructions Mécaniques de Normandie, Cherbourg. Launched on 21 Jan. 1958, Completed in 1959. Transferred from the French Navy to the Malgache Navy in 1963.

ROYAL NETHERLANDS NAVY

Administration

Minister of Defence: P. J. S. de Jong

Secretary of State for Defence (Navy):
A. Van Es

Chief of the Naval Staff and Commander-in-Chief: Vice-Admiral A. H. J. van der Schatte Olivier.

Naval Attaché in London: Captain B. ter Brake. Naval Attaché in Washington: Rear-Admiral R. W. Count van Lynden.

New Construction Programme

6 frigates of the British "Leander" class design powered by steam turbines;

l nuclear powered submarine, hunter-killer type;

2 conventional submarines, ocean-going type.

Navy Estimates

1956: Fl. 342,312,000 1957: Fl. 352,770,000 1958: Fl. 363,793,000 1959: Fl. 360,609,000 1960: Fl. 380,779,000 1966: Fl. 578,524,700

Personnel

1 January 1966: 20,636 officers and ratings (including 2,109 officers and ratings of the Navy Air Arm, 2,976 officers and men of the Royal Marine Corps and 247 officers and women of the W.R.NL.N.S.)

Ships

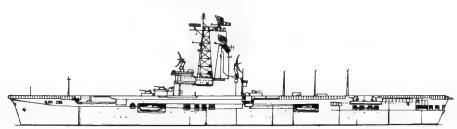
Warships are painted greyish blue except submarines, which are black overall. Ships of the Royal Netherlands Navy are referred to by the prefix "Hr. Ms."

Mercantile Marine

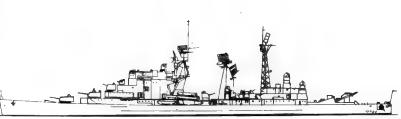
Lloyd's Register of Shipping: 1,847 vessels of 4,891,041 tons gross

Silhouettes

Scale: 150 ft.=1 inch.



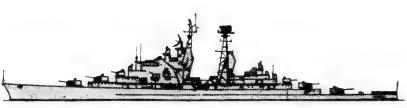
KAREL DOORMAN



DE ZEVEN PROVINCIEN



FRIESLAND Class



DE RUYTER



HOLLAND Class







SNELLIUS Class

AIRCRAFT CARRIER (Vliegkampschip)

KAREL DOORMAN (ex-H.M.S. Venerable)

Deck Letter D

Pennant No. R 81

Builders Cammell Laid & Co. Ltd., Birkenhead

Laid down 3 Dec. 1942

Launched 30 Dec. 1943

Completed 17 Jan. 1945

I Ex-British "Colossus" Class

Displacement:

Dimensions:

15,892 tons standard (19,896 tons full load)
Length: 630 (pp.), 693\(\frac{1}{4}\) (o.a.)
feet, Beam: 80 feet. Width overall: 121\(\frac{1}{4}\) feet
Draught: 24\(\frac{1}{4}\) (max.) feet
10—40 mm. AA. and saluting
Capacity 21. Official complement: 8 Tracker S2A's, 6 Seabat
SH-34\) helicopters
Parsons geared turbines 2 shafts.
S.H.P.: 40,000=24.25 kts.
4, of 3-drum type: 400 lb. working pressure, 700 degrees maximum superheat
3,200 tons
12,000 miles at 14 kts.
1,462 Guns: Aircraft:

Machinery:

Boilers:

Oil fuel-

Radius: Complement:

General

Purchased from Great Britain on 1 Apr. 1948. Com-missioned in the Royal Netherlands Navy on 28 May 1948. Insulated for tropical service and partly air-conditioned.

An aerial counter view appears in the 1965-66 edition.

Reconstruction

Neconstruction
Underwent modernisation in 1955-58, including angled flight deck and steam catapult, mirror sight landing system and new anti-aircraft battery of ter 40 mm. guns, at the Wilton-Fijenoord Shipyard, at a cost of 25 million guilders. Conversion completed in July 1958.

Hangar
Dimensions of hangar are: Length, 455 feet: width, 52 feet; clear depth, 17½ feet.

52 feet; clear depth, 1/½ feet.

Engineering

Engines and boilers are arranged en echelon, the two propelling-machinery spaces having two boilers and one set of turbines in each space, on the unit system.

Appearance

With a modified island and bridge and a lattice tripod

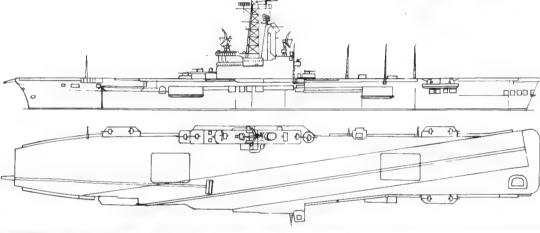
radar mast, and a tall raked funnel, she differs con-siderably from her former appearance and from her original sister ship in the British, French, Argentine and Brazilian navies.

Port elevation and plan. Redrawn in 1966, Scale: 128 feet=1 inch.



KAREL DOORMAN

1966, R.N.N. Official





KAREL DOORMAN

1966, Skyfotos



KAREL DOORMAN

1965. Skyfotos

SUBMARINES (Onderzeeboten)

POTVIS TONIJN DOLFIJN ZEEHOND	Pennant No. S 804 S 805 S 808 S 809	Builders Dok en Werf Mij. Wilton-Fijenoord, Scheidam Dok en Werf Mij. Wilton-Fijenoord, Scheidam Rotterdamse Droogdok Mij., Rotterdam Rotterdamse Droogdok Mij., Rotterdam	Laid down 17 Sep. 1962 27 Nov. 1962 30 Dec. 1954 30 Dec. 1954	Lounched 12 Jan. 1965 14 June 1965 20 May 1959 16 Mar. 1961	Completed 2 Nov. 1965 ————————————————————————————————————
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2 "Potvis" Class 2 "Dolfijn" Class

Displacement:

Dimensions: Tubes:

1,140 tons standard; 1,494 tons surface; 1,826 tons submerged 260§×25½×15½ feet 8—21 inch 2 MAN. 12-cyl. diesels. 2 shafts. B.H.P.: 3,100=14·5 kts. surface Electric motors. H.P.: 4,200=17 kts. submerged 44 Machinery:

Complement:

Complement: 64

General

These submarines are of a triple-hulled design. Maximum depth; 980 feet. Four new submarines were first voted for in 1949, but the contracts for Potvls, O 34 and Tonlin, O 35, were cancelled and their construction suspended pending a study of future requirements. The order was later replaced (see above). The four submarines are of the same design, but Potvls and Tonlin have several modifications compared with Dolfin and Zeehond and are therefore officially considered to be a separate class. separate class.

Construction

The hull consists of three cylinders arranged in The hull consists of three cylinders arranged in a triangular shape. The upper cylinder accommodates the crew, as well as navigational equipment and armament. The lower two cylinders house the propulsion machinery comprising diesel engines and electric motors. The three cylinders are fitted in a pressure-tight steel hull. See Frontispiece of the 1959-1960 edition for scale models—cutaway longitudinal section showing double decker roominess, and cross section showing triple hull permitting greater diving depth.

Projected

Nuclear Powered Type
In the "defence note" issued in June 1964 the construction of nuclear powered submarines was announced.
A first instalment for the construction of the first nuclear powered submarine was approved in the 1965 Navy Estimates. The cost is estimated to amount to £17,000,000.

New Construction

Conventionally Powered Type
In the 1964 Navy Estimates a first instalment was approved for the construction of two submarines of "teardrop" design planned to replace the two submarines of the "Walrus" class (on loan from the U.S. until 1968).



POTVIS

1966, Royal Netherlands Navy, Official



DOLFIJN

1966. Royal Netherlands Navy, Official



ZEEHOND

1966, courtesy Godfrey H. Walker, Esq.

Pennant No.
\$ 802
\$ 803

2 "Walrus" Class (Ex-U.S. "Balao" Type)

Displacement:

1,420 tons standard, 1,525 tons surface (2,425 tons submerged) 309 (o.a.)×27×17 feet 10—21 inch (6 bow, 4 stern). G.M. 2 stroke diesels. B.H.P.: 6,500=20 kts. (surface). Electric motors. H.P.: 2,700=10 kts. (submerged) Dimensions:

Machinery:

(submersed) 300 tons 12,000 miles at 10 kts. 79 Oil fuel: Radius: Complement:

General
Former United States "Balao" Class submarines, acquired on loan from the United States Navy for a period of five years, subsequently extended to ten years, and again later to fifteen years. They were transferred to the Royal Netherlands Navy on 21 Feb. and 21 April 1953, respectively, after having been converted and streamlined with enclosed conning tower "fin". 24 torpedoes can be carried.

Disposals of "T" Class
Of the two submarines of the former British "T" class, Zwoardvis (ex-H.M.S. Talent) was withdrawn from the service on 15 Jan. 1963 and scrapped in July 1963 and Tygerhaal (ex-H.M.S. Tarn) was officially deleted from the list in 1966.

Disposals of "O" Class
O 27 was stricken from the active list in Dec. 1959
and sold, O 24, removed from the effective list in 1956
and used for instruction until she was discarded in
1962, was sold for scrap in June 1963 and broken up
at Flushing. O 21 was sold for scrap on 24 Jan. 1958.

Builders	Loi	d down Laun	ched (Completed	Converted	Tra	insfer	red
Manitowoc S.B. Wisconsin	Co., 19	43 20 Feb	. 1944 10	June 1944	1952	21 F	Feb.	1953
Manitowoc S.B. Wisconsin	Co., 19	43 9 Jan.	. 1944 17	May 1944	1952	21 /	Apr.	1953



ZEELEEUW

1966. Royal Netherlands Navy, Official



WALRUS

1966, courtesy Godfrey H. Walker, Esq.

DE RUYTER (ex-De Zeven Provincien)

DE ZEVEN PROVINCIEN (ex-De Ruyter, ex-Eendracht ex-Kijkduin)

Displacement:

Dimensions:

Guns:

9,529 tons standard (11,850 tons full load) Length: 590½ (pp.), 614½ and 609 (o.a.) feet respectively. Beam: 56½ feet. Draught: 22 (max.) feet
De Ruyter: 8—6 inch in twin turrets, 8—57 mm. AA. in twin turrets, 8—40 mm. AA.
De Zeven Provincien: 4—6 inch in twin turrets, 6—57 mm. AA. in twin turrets, 4—40 mm. AA.
De Zeven Provincien only: One twin launcher aft for "Terrier" missiles

missiles

missiles
3"-2" side; 4", 2\frac{1}{4}"-2" turrets
Parsons geared turbines, 2 shafts
S.H.P.: 85,000= 32 kts.
4, of 3-drum type
De Ruyter: 926
De Zeven Provincien: 848 Armour: Machinery:

Boilers: Complement:

Guided weapons:

General

General
Machinery by K. M. de Schelde. Construction resumed in 1946. De Ruyter was launched by the Germans as the De Zeven Provincien, but as the latter name was given to the former De Ruyter when she was launched on 22 Aug. 1950, the war-launched ship took her sister's name in exchange. Tripod mast, originally abaft after funnel, is now before after funnel.

Guided Missile Conversion

De Zeven Provincien has been rearmed with one twin launcher for "Terrier" guided missiles. Conversion by Rotterdamsche Droogdok Mij. Rotterdam. 'Terrier' installation by N.V. Dok en Werf Mij Wilton-Fijenoord, Schiedam. Conversion commenced in 1962 and was completed at the end of 1964. De Ruyter will not be converted.

Photographs

A photograph of De Zeven Provincien before conversion appears in the 1961-62 to 1964-65 editions.

Main armament has 60 degrees elevation. All guns are fully automatic and radar controlled. The 6 inch guns have a rate of fire of 15 rounds per minute.

Drawing

Drawing Represents De Zeven Provincien. Port elevation and plan, Drawn in 1966. De Ruyter has curved bow which accounts for the variation in overall length. Scale: 128 feet=1 inch. A port elevation and plan drawing of De Ruyter appears in the 1953-54 to 1965-66 of De editions.

CRUISERS (Kruisers)

Pennant No. C 801

C 802

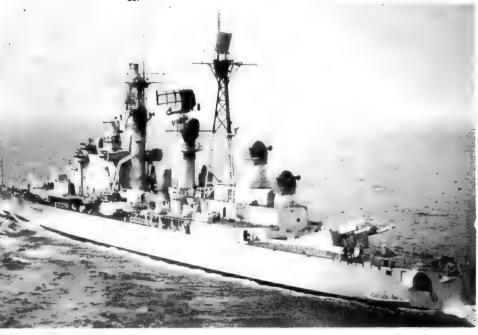
Builders Wilton-Fijenoord, Schiedam Rotterdam Drydock

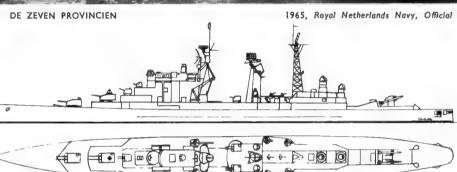
Laid down 5 Sep. 1939 19 May 1939 Launched 24 Dec. 1944

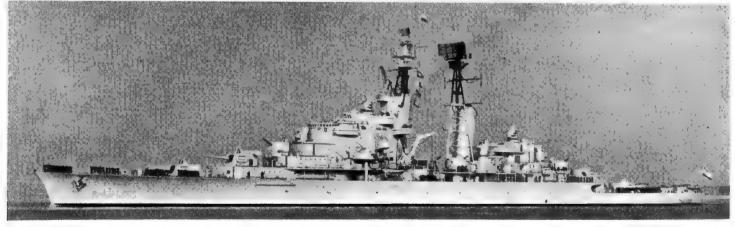
Completed 18 Nov. 1953

22 Aug. 1950

17 Dec. 1953







DE RUYTER

1966, Wright & Logan



ANTI-SUBMARINE DESTROYERS DDE (Onderzeebootjagers)

	Pen. No.	Builders	Laid down	Launched	Completed
FRIESLAND	D 812	Nederlandse Dok en Scheepsbouw Mij., Am'dam	17 Dec. 1951	21 Feb. 1953	22 Mar. 1956
GRONINGEN	D 813	Nederlandse Dok en Scheepsbouw Mij., Am'dam	21 Feb. 1952	9 Jan. 1954	12 Sep. 1956
LIMBURG	D 814	Koninklijke Maatschappij De Schelde, Flushing	28 Nov. 1953	5 Sep. 1955	31 Oct. 1956
OVERIJSSEL	D 815	Dok-en-Werfmaatschappij Wilton-Fijenoord	15 Oct. 1953	8 Aug. 1955	4 Oct. 1957
DRENTHE	D 816	Nederlandse Dok en Scheepsbouw Mij., Am'dam	9 Jan. 1954	26 Mar. 1955	1 Aug. 1957
UTRECHT	D 817	Koninklijke Maatschappij De Schelde, Flushing	15 Feb. 1954	2 June 1956	1 Oct. 1957
ROTTERDAM	D 818	Rotterdamse Droogdok Mij., Rotterdam	7 Jan. 1954	26 Jan. 1956	28 Feb. 1957
AMSTERDAM	D 819	Nederlandse Dok en Scheepsbouw Mij., Am'dam	26 Mar. 1955	25 Aug. 1956	10 Aug. 1958

8 "Friesland" Class

2,497 tons standard (3,070 tons full load) Displacement: 370 (pp.), 380½ (o.a.)×38½× 13 feet Dimensions:

4-4-7 inch in twin turrets, 6-40 m m. AA. I flare rocket launcher
Removed (see Torpedo Tubes)

Tubes: A/S weapons:

Removed (see lorpedo lubes)
2 four-barrelled rocket throwers
(depth charge mortars)
Geared turbines 2 shafts, S.H.P.:
60,000=36 kts.
4 Babcock & Wilcox Machinery:

Boilers:

Complement:

General

These ships have some side armour as well as deck protection, like light cruisers. They have "Limbo" type anti-submarine rocket throwers. Named after provinces of the Netherlands, and the two principal cities.

Gunnery The 4.7 inch guns are fully automatic with a rate of fire of 50 rounds per minute. All guns are radar controlled,

Torpedo Tubes

Torpedo Tubes
Utrecht was equipped with eight 21 inch anti-submarine torpedo tubes (single mounts), four on each
side) in 1960 and Overlissel in 1961, and the others
were to have been sinilarly armed, but owing to further developments in anti-submarine warfare the project was dropped and torpedo tubes already fitted were
removed.

Photographs of Friesland appear in the 1956-57 to 1958-59 editions, and of Overijssel in the 1958-59 to 1961-62 editions.



ROTTERDAM

1966, Skyfotos

	Pen. No.
HOLLAND	D 808
ZEELAND	D 809
NOORD BRABANT	D 810
GELDERLAND	D 811

4 ''Holland'' Class

2,215 tons standard (2,765 tons Displacement: full load)

7011 load)
3601 (pp.), 371 (o.a.)×371×
121 feet
4-4-7 inch in twin turrets; 1-Dimensions:

Guns: 4—47 mm. AA. 40 mm. AA. 2 four-barrelled rocket throwers A/S weapons:

2 four-parrelled rocket throwers (depth charge mortars)
Geared turbines, 2 shafts, S.H.P.: 45,000=32 kts.
4 Babcock & Wilcox 247 Machinery:

Boilers:

Boilers: 4 Babcock & Wilcox Complement: 247

General

These ships were equipped with the turbines originally built before the Second World War for the destroyers of the "Gerard Callenburgh" class then under construction. In May 1940 these turbines fell into German hands, but in 1945 they were recovered, as the destroyers which the Germans ordered to be built by Netherlands shipbuilding yards and fitted with these turbines were never built.

Builders Rotterdamse Droogdok Mij., Rotterdam Koninklijke Maatschappji De Schelde, Flushing Koninklijke Maatschappji De Schelde, Flushing Dok-en-Werfmaatschappij Wilton-Fijenoord

Laid down Launched 21 Apr. 1950 12 Jan. 1951 1 Mar. 1951 11 Apr. 1953 27 June 1953 28 Nov. 1953

Completed 31 Dec. 1954 1 Mar. 1955 1 June 1955



Tubes HOLLAND

Unlike most orthodox destroyers these never had tubes Gunnery

Sunnery
The 4-7 inch guns are fully automatic and radar controlled.

1966, courtesy Godfrey H. Walker, Esq.

rnotographs
A photograph of Noord Brabant appears in the 1957-58 edition, of Zeeland in the 1958-59 to 1960-61 editions, and of Gelderland in the 1961-62 to 1965-66 editions.

FRIGATES Fregatten)

6 New Construction "Van Speijk" Class

2,200 tons standard (2,850 tons Displacement: full load) 360 (w.l.), 372 (o.a.) \times 41 \times 14 feet Dimensions:

2—4.5 inch (twin turret)
2 quadruple launchers for "Seacat" close range anti-aircraft Guns: Guided weapons:

missiles three-barrelled depth charge A/S weapons: Aircraft:

mortar. Variable depth charge mortar. Variable depth sonar I lightweight helicopter armed with homing torpedoes 2 sets double reduction geared steam turbines. 2 shafts. S.H.P.: 30,000=28-5 kts. Machinery:

Complement: 254

General

General These six new frigates are now being built as replacements for the six frigates of the "Van Amstel" class which will be returned to the U.S. successively. The ships are mainly based on the design of the British "Leander" class.

Laid down
1 June 1964
25 July 1963
25 July 1963
1 Oct. 1963
5 May 1965
5 May 1965 Launched 17 Dec. 1965 19 June 1965 26 Mar. 1966 5 Mar. 1965 Nederlandse Dok en Scheepsbouw Mij., Amsterdam Koninklijke Maatschappij De Schelde, Flushing Koninklijke Maatschappij De Schelde, Flushing Nederlandse Dok en Scheepsbouw Mij., Amsterdam Koninklijke Maatschappij De Schelde, Flushing Nederlandse Dok en Scheepsbouw Mij., Amsterdam F 804 F 803 F 805 TJERK HIDDES VAN GALEN VAN NES VAN SPEIJK 802 **EVERTSEN** ISAAC SWEERS 814

Builders

In order to avoid delay in the construction programme is was decided to fit out these ships with equipment available at short notice and not to wait for equipment still in the development stage.

As far as possible equipment of Netherlands manufacture will be installed, and this will result in a number of changes in the ships' superstructure.

Four ships were ordered in Oct. 1962. Two additional frigates of the same design were ordered later. Although in general they are based on the design of the British Improved Type 12, they will have small modifications

accordance with the requirements of the Royal Netherlands Navy.

Disposals of "Piet Hein" Class
Of the three fast frigates of the "Piet Hein" class, converted from destroyers (originally "S" class destroyers purchased from Great Britain in 1945-46 and reconstructed with helicopter platform at Rijkswerf Willemsoord in 1957-58) Piet Hein (ex-H.M.S. Serapls) was scrapped on 16 Oct. 1961, and Evertsen (ex-H.M.S. Scourge) and Kortenaer (ex-H.M.S. Scorplon, ex-Sentinel) were withdrawn from the service in Dec. 1962 and scrapped.

DE BITTER (ex-U.S.S. Rinehart, DE 196)
DE ZEEUW (ex-U.S.S. Eisner, DE 192)
DUBOIS (ex-U.S.S. O'Neill, DE 188)
VAN AMSTEL (ex-U.S.S. Burrows, DE 195)
VAN EWIJCK (ex-U.S.S. Gustafson, DE 182)
VAN ZIJLL (ex-U.S.S. Stern, DE 187)

6 "Van Amstel" Class (Ex-U.S. Destroyer Escort Type

Displacement: Dimensions:

1,300 tons standard, 1,510 tons normal (1,900 tons full load)
306 (o.a.)×36×14 (max.) feet
3—3 inch, 50 cal. d.p., 6—40 mm. AA.
Removed (see notes)
1 Hedgehog, 4 D.C.T., 2 D.C. racks

Tubes: A/S weapons:

racks

Machinery:

racks
General Motors diesels, Electric
drive, B.H.P.: 6,000=19 kts.
300 tons
11,500 miles at 11 kts,
170 to 210

Oil fuel: Radius: Complement:

General

General
Former United States destroyer escorts, DE, of the
"Bostwick" class acquired under the Mutual Defence
Assistance Programme. Van Amstel and De Bitter were
commissioned in the Royal Netherlands Navy on 1 June
1950. Dubois and Van Ewijck were transferred on 23
Oct. 1950, and De Zeeuw and Van Zijii on 3 May
1951, at Boston.

Oct. 1950, and De Zeeuw and Van Zijil on 3 May 1951, at Boston.

Torpedo Tubes

The original three 21 inch torpedo tubes in a triple mounting were removed.

Disposals of Frigates

Johan Maurits van Nassau was scrapped in 1960; Van Speljk was stricken from the active list in 1960; Batjan, Boeroe and Ceram in 1958; Jan van Brakel in Aug. 1957; Soemba in Jan. 1956; Van Kinsbergen on 1 Dec. 1955; Flores on 1 May 1955. (Flores was renamed Van Speljk after the former Van Speljk was stricken from the active list but renamed Flores again after the launch of the new frigate Van Speljk on 5 Mar. 1965.)

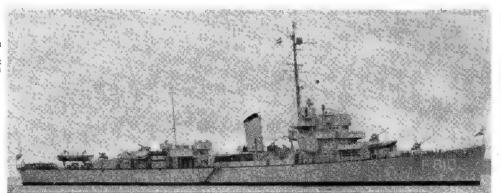
Disposal of Frigate (ex-Destroyer)

Marnix (ex-H.M.S. Garland), former British destroyer of the "G" flotilla, purchased by the Netherlands in 1947 and subsequently refitted as an anti-submarime vessel and engineering training ship, and reclassified as a frigate, was stricken from the active list on 31 Jan. 1964 and was sold for scrap on 10 Apr. 1964 to J. de Smedt at Antwerp.

Disposal of Destroyers

The destroyers Banckert (ex-H.M.S. Quilliam) and Van Galen (ex-H.M.S., Noble) were sold for scrap on 8 Feb. 1957, Banckert to J. de Smedt at Antwerp and Van Galen to Frank Rijsdijk's Industriele Handelsondernemingen at Hendrik-Ido-Ambacht.

Frigates—contd. Completed 19 Dec. 194 1 Jan. 194 6 Dec. 194 12 Feb. 194 1 Nov. 194 1 Dec. 194 Launched
24 Oct. 1943
12 Dec. 1943
14 Nov. 1943
8 Jan. 1944
3 Oct. 1943
31 Oct. 1943 Pennant No. Federal S.B. & D.D. Co., Port Newark Federal S.B. & D.D. Co., Port Newark Federal S.B. & D.D. Co., Port Newark Dravo Corporation, Wilmington, Del. Federal S.B. & D.D. Co., Port Newark Federal S.B. & D.D. Co., Port Newark Federal S.B. & D.D. Co., Port Newark F 807 F 810 F 809 1943 1944 1943 1944 1943



DE ZEEUW

1966, courtesy Godfrey H. Walker, Esq.



DE BITTER

1964, courtesy Mr. Michael D. J. Lennon

Completed

6 "Wolf" Class

U.S. PCE Type Escorts

Displacement:

808 tons standard (975 tons full

Dimensions:

Guns:

A/S weapons? Machinery:

808 tons standard (9/5 tons run load)
180 (pp.), 184½ (o.a.)×33×9½ (mean), 14½ (max.) feet
1—3 inch, d.p., 6—40 mm. AA. (Jaguar, Panter, 4—40 mm.), 8—20 mm. AA.
1 Hedgehog, 2 D.C.T. (Jaguar, Panter, 4 D.C.T.), 2 D.C. racks Dieseis. 2 shafts. B.H.P.: 1,600 = 15 kts. =15 kts. 96

Complement:

General

General
All built in the United States under the Mutual
Defence Assistance Programme, Jaguar, Panter and Woif
by Avondale Marine Ways, Inc, New Orleans, Louisiana,
Fret, Hermelijn and Vos by the General Shipbuilding and
Engineering Works, Boston.

Photographs
A photograph of Fret appears in the 1957-58 to 1960-61 editions.

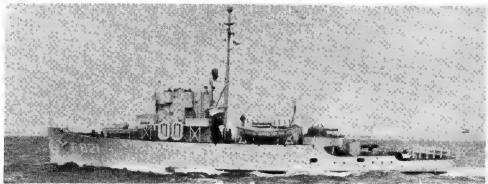
Disposais

Disposals

The corvette Lynx (ex-PCE 1626) was handed over to the Italian Navy on 18 Oct, 1961 at Den Helder as part of the United States Mutual Defence Assistance Programme and renamed Aquila (see Italian section).

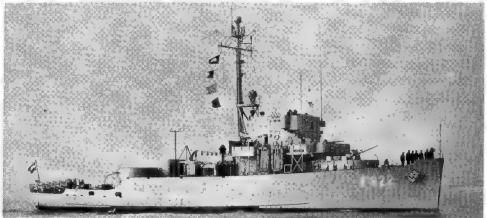
Disposal of Minesweeper Support Ship
The minesweeper support ship Willem van der Zaan,
former frigate, former minelayer, was removed from
the active list on 1 Oct. 1963 and is being used as an
accommodation ship at Flushing, permant number A 880
(instead of F 824).





PANTER

Royal Netherlands Navy, Official



JAGUAR

Wright & Logan

ESCORTS (Escortevaartuigen)

6 U.S. AM Wooden Type

·			rennunt 140.	Edio Gowii	Completed
ONVERSAAGD ONBEVREESD ONVERSCHROKKEN ONVERMOEID ONVERVAARD ONVERDROTEN	(ex-AM (ex-AM (ex-AM (ex-AM (ex-AM (ex-AM	481) A 483) A 484) A 482) A	854 (ex-M 884 855 (ex-M 885 856 (ex-M 886 857 (ex-M 887 858 (ex-M 888 859 (ex-M 888) 1952) 1952) 1952) 1952) 1952	27 May 1954 21 Sep. 1954 22 July 1954 23 Sep. 1954 31 Mar. 1955 22 Nov. 1954

735 tons standard (790 tons full load)
165 (pp.), 172 (o.a.)×36×10 (max.) feet
1—40 mm. AA.
2 D.C.
Diesel. B.H.P.: 1,600=15·5 kts. Displacement: Dimensions: Guns: A/S weapons: Machinery: Oil fuel; 46 tons 2,400 miles at 12 kts. 67 Radius:

General
Built in the United States for the Netherlands under the terms of the Mutual
Defence Assistance Programme. All completed in 1954-55. Onversagg, Onbevreesd
and Onvervaard were built by Astoria Marine Construction Co. and the remaining
three by Peterson, Builders, Wisconsin.

Reclassification
Originally designed as Ocean Minesweepers (Oceanmilinenvegers) but now being used as Escorts and re-numbered with "A" pennants in 1966. **Photographs**

tographs of Onverdroten appear in the 1957-58 to 1965-66 editions.



ONVERVAARD

1966, Skyfotos

PATROL VESSELS (Patrouillevaartuigen)

5 U.S. SC Type Submarine Chasers

	3 0.3.	oc Type Sabin	dillic Cilascis	
	Pennant No.	Laid down	Launched	Completed
BALDER	P 802	12 Sep. 1953	24 Feb. 1954	6 Aug. 1954
BULGIA	P 803	10 Oct. 1953	24 Apr. 1954	9 Aug. 1954
FREYR	P 804	24 Feb. 1954	21 July 1954	1 Dec. 1954
HADDA	P 805	24 Apr. 1954	2 Oct. 1954	3 Feb. 1955
HEFRING	P 806	21 July 1954	1 Dec. 1954	23 Mar. 1955

149 tons standard (225 tons full load) 114§ (pp.), $119\frac{1}{4}$ (o.a.)× $20\frac{1}{4}$ × $5\frac{7}{4}$ feet 1—40 mm., 3—20 mm. 2 D.C.T., Mousetrap Diesels, 2 shafts. S.H.P.; 1,050=15·5 kts, 1,000 miles Displacement: Dimensions:
Guns:
A/S weapons:
Machinery: Radius: Complement:

Built in the Netherlands by Rijkswerf Willemsoord with United States fund under the terms of the Mutual Defence Assistance Programme as an off-shore procurement. U.S. SC Nos. 1627-1631.

Photographs

A photograph of Hadda appears in the 1960-61 edition, and of Balder in the 1955-56 to 1959-60 and 1961-62 to 1965-66 editions.

Transfer

The patrol vessel Queen Wilhelmina (ex-U.S.S. PC 468), former United States submarine chaser of the PC type, was refitted at the Dok en Werf Mij, Wilton Fijenoord, Schiedam, early in 1963, and commissioned on 26 July 1963 for use by the Nigerian Navy as a training ship under the name Ogoja.



FREYR

1966, Royal Netherlands Navy, Official

COASTAL MINESWEEPERS (Kustmijnenvegers)

32 "Dokkum" Class. Netherlands Wooden Type

AALSMEER M 811
ABCOUDE M 810
AXEL M 808
DOKKUM M 801
DRACHTEN M 812
DRUNEN M 818
ELST M 829
GEMERT M 841
GIETEN M 805
GIETHOORN M 815
GOES M 819

Guns: Machinery:

GRIJPSKERK M 826 HOOGEZAND M 802 HOOGEVEEN M 827 LEERSUM* M 822 LISSE* M 843 LOCHEM M 816 MEPPEL M 814 NAALDWIJK M 809 NAARDEN M 823 OMMEN M 813 Displacement: Dimensions:

RHENEN* M 844 ROERMOND M 806 SITTARD M 830 STAPHORST M 828 SNEEK M 824 STEENWIJK M 804 STEENWIJK M 804 VEERE M 842 VENLO M 817 WAALWIJK* M 807 WILDERVANK M 803 WOERDEN* M 820

373 tons standard (417 tons full load)
149½ (o.a.)×28×6½ feet
2—40 mm.
2 Diesel engines, Fyenoord MAN or Werkspoor type (Netherlands). B.H.P.: 2,500=14 to 16 kts.

General Complement: General
Of 32 coastal minesweepers built in the Netherlands, 18 were offshore procurement (on U.S. account under the Mutual Defence Assistance Programme) but conform to the British design of coastal minesweepers. The Netherlands built the remaining 14 minesweepers on her own account. All launched in 1954-56 and completed in 1955-57. Named after small towns in the Netherlands. Leersum, Lisse, Rhenen, Waalwijk and Woerden were re-rated as diving vessels in 1962-65. A photograph of Dakkum appears in the 1956-57 to 1961-62 editions, and of Venio in the 1961-62 to 1965-66 editions.



MEPPEL

1966, courtesy Dr. Ian S. Pearsall



AALSMEER

1962, Royal Netherlands Navy, Official

14 "Beemster" Class. U.S. AMS Wooden Type

BEEMSTER (ex-AMS 105) M 845
BOLSWARD (ex-AMS 109) M 846
BEDUM (ex-Beerta, ex-AMS 106)
BEILEN (ex-AMS 110) M 848
BORCULO (ex-AMS 107) M 849
BORNE (ex-AMS 108) M 850
BRUMMEN (ex-AMS 111) M 851 846 M 847

BREUKELEN (ex-AMS 100) M 852
BLARICUM (ex-AMS 112) M 853
BRIELLE (ex-AMS 167) M 854
BRESKENS (ex-AMS 148) M 855
BRUINISSE (ex-AMS 149) M 857
BROUWERSHAVEN (ex-AMS 150)

330 tons standard, 364 tons normal (384 tons full load) 138 (pp.), $144\frac{1}{2}$ (o.a.) $\times 27\frac{1}{2}\times 7\frac{1}{2}$ feet 2—20 mm. AA 2 diesels. B.H.P.: 880=13·6 kts. Displacement: Dimensions: Guns: Machinery: Complement:

General
Built in U.S.A. Non-magnetic MSC (ex-AMS) type. All transferred from the
U.S.N. Completed and commissioned at New Orleans, Seattle and San Francisco in
1953-54. Named after small towns in the Netherlands.
A photograph of Beemster appears in the 1955-56 to 1960-61 editions, and
of Brouwershaven in the 1961-62 to 1965-66 editions.



BRUMMEN

1966, Royal Netherlands Navy, Official

(Ondiepwater mijnenvegers)

ALBLAS M 868 BUSSEMAKER M 869 CHÖMPFF M 874 HOUTEPEN M 882 LACOMBLÉ M 870

Guns:

General

Displacement:

Dimensions:

Machinery: Complement:

MAHU M 880
SCHUILING M 876
STAYERMAN M 881
VAN DER WEL M 871
VAN HAMEL M 871
VAN 'T HOFF M 879

151 tons liabs / 125

151 tons light (169 tons full load)
90 (pp.), 99½ (o.a.)×18½×5½ feet
1—20 mm. AA.
Werkspoor diesels, 2 shafts, B.H.P.: 1,100=13 kts.

General

The United States and the Netherlands signed an agreement for the construction of 16 inshore minesweepers for the Royal Netherlands Navy at a cost of \$16,900,000. Ccntracts were awarded as follows: 6 to Werf de Noord at Albasserdam; 5 to N.V. de Arnhemse Scheepsbouw Maastchappij at Arrhhem; and 5 to Amsterdamsche Scheepswerf G. de Vries Lentsch Jr. at Amsterdam.

Eight of these ships were built under the offshore procurement programme, with MDAP funds, and the remaining eight were paid for by the Royal Netherlands Navy.

MDAP funds, and the remaining eight were paid for by the Royal Netherlands Navy.

All ordered in mid-1957. Built of wood and non-magnetic materials. The keel for Atblus, the first of this new type of small minesweepers was laid at the yard of Werf de Noord N.V. at Albasserdam on 26 Feb. 1958, she was laurched on 29 June 1959, started trials on 15 Jan. 1960 and was completed on 12 Mar. 1960. All the remaining ships of the class were laid down in 1958-61, launched in 1958-61 and commissioned in 1960-62.

commissioned in 1960-64.

The first nime ships built are named after naval and marine officers who distinguished themselves during the Second World War. The remaining seven are named after naval ratings who were also decorated posthumously.

A photograph of Alblas appears in the 1960-61 edition, and of Bussemaker in the 1961-62 to 1965-66 editions



VAN STRAELEN

1966, Royal Netherlands Navy, Official

ACCOMMODATION SHIPS (Logementschepen)

The following are also used as accommodation ships: A 880 William von der Zaan. former minesweeper support ship, former frigate, former minelayer, A 877 (ex-flores), former gunboat, A 878, Tromp, A 879 Jacob van Heemskerck, former light cruisers, A 891 Soemba, former radar training ship, A 881 Neptunus, A 882 Schorpioen, A 884 Buffel, A 886 Cornolis Drebbel, A 887 Haarlemmermeer and A 888 Hertog Hendrik (old ships).
Disposals

Medium minerweeper support ship former minelayer rafitted as accommodation

former minelayer refitted as accommodation

Meduso, minesweeper support ship, former minelayer refitted as accommodation and repair ship, was stricken in June 1964.

Douwe Aukes, former minelayer converted into an accommodation and repair ship for minesweepers, was decommissioned on 1 Feb. 1962 and sold for scrap.

SUPPLY SHIPS (Voorraadschepen)

ZUIDERKRUIS (ex-Cranston Victory)

Displacement: 7,190 tons light (11,688 tons full load)

Measurement: Dimensions:

9,376 tons gross $455\frac{1}{4}$ (o.a.) \times 62 \times 20 $\frac{1}{4}$ feet Westinghouse steam turbines. S.H.P.; 8,500=17 kts.

Machinery: Oil fuel: 1.560 tons

General "Victory ship type. Former merchant liner (emigrant carrier), Built in 1944 by the Oregon Shipbuilding Corp. at Portland, Oregon, U.S.A. Purchased by the Royal Netherlands Navy in Jan. 1963 for use as a store ship and conversion as accommodation ship for base staff at Den Helder. Pennant No. A 853.

I Ex-U.S. LST Type

WOENDI (ex-Steven van der Hagen, ex-LST V, ex-LST 1034)

1.625 tons light, 3,770 tons standard (4,145 tons full Displacement:

Dimensions: Guns:

Machinery: Complement:

General

Built at Boston, Mass., in 1944. Seagoing store ship at Dem Helder, Pennant No. A 832.

I Ex-British LST Type

PELIKAAN (ex-H.M.S. Thruster, ex-LST)

Displacement: 2,840 tons light, 4,250 tons standard (6,538 tons full

load) 390×49×13 feet Dimensions:

2—40 mm. AA., 10—20 mm. AA. Turbine. S.H.P.; 7,000=17 kts. 2,100 tons (max.) Guns: Machinery:

Oil fuel: Complement:

General
Built by Harland & Wolff Ltd., Belfast. Laid down on 31 July 1941. Launched on
24 Sep. 1942. Completed on 14 Mar, 1943. Purchased and taken over from Great
Britain in 1947. Commissioned in the Royal Netherlands Navy in July 1948. Used as
a store and accommodation ship at Den Helder, Pennant No. A 830. Photograph in
the 1957-58 edition. Originally a sister ship of H.M.S. Boxer.

SURVEY SHIPS (Opnemingsvaartuigen)

2 Sloop Type

No. Builders Laid down Launched Launched LUYMES A 902 Gusto, Schiedam 4 Apr. 1949 21 Apr. 1951 4 May 1952 SNELLIUS A 907 P. Smit, Jr., Rotterdam 3 Jan. 1949 14 Apr. 1951 4 Feb. 1952

1,100 tons standard (1,538 tons full load)
234½×35½×7 (max.) feet
1.—40 mm, AA., 2.—20 mm, AA.
2 D.C.T:, 1 Mousetrap
Two 6-cycle, 4-stroke Stork diesels, 2 shafts.
B.H.P.: 2,000=15 kts. Displacement: Dimensions: Guns:

A/S weapons: Machinery:

Complement:

General Fitted for service in the tropics. A photograph of Luymes appears in the 1960-61 1965-66 editions



SNELLIUS

1966, Skyfotos

DREG IV

ZEEFAKKEL

355 tons standard (384 tons full load)
149 (o.a.) 24\frac{1}{2}\text{7} (max.) feet
1-3 inch AA., 1-40 mm. AA.
Two 8-cycle 4-stroke Smit M.A.N. diesels: 2 shafts.
B.H.P.: 640=12 kts. Displacement: Dimensions: Guns:

Machinery:

I Patrol Type

29

Complement: General

General

This ship was originally ordered from Vuyk but her construction was transferred later to J. & K. Smit Kinderdijk where she was laid down in Sep. 1949, launched on 21 July 1950 and completed on 22 Mar. 1951. Commissioned on 23 Mar. 1951, for service in Dutch waters. Pennant No.; A 903. service i Disposal

Hydrograaf, surveying vessel of the coastal type, was stricken from the active list in Oct. 1962, and transferred to the Sea Cadet Corps, Rotterdam as training ship.



ZEEFAKKEL

Added 1966, courtesy Lieut. L. L. von Munching

4 Inshore Type

Displacement: Dimensions:

DREG II DREG III 46 tons standard (48 tons full load) $65\frac{3}{15}$ 5 feet H.P.: 120=9.5 kts.

Machinery:

Dreg I and Dreg II were launched on 15 May 1950 and completed in July 1950. Pennant Nos. A 909, A 910, A 919 and A 920, respectively.

DIVING VESSELS (Duikvaartuigen)

General
The five diving vessels (ex-coastal minesweepers) of the U.S. BYMS type, Borndlep (ex-BYMS 2210). Deurloo (ex-BYMS 2254), Marsdiep (ex-BYMS 2038), Vilestroom (ex-BYMS 2155) and Zulderdlep (ex-BYMS 2048) were sold in 1962 and replaced by five coastal minesweepers of the "Dokkum" class, LEERSUM, LISSE, RHENEN, WAALWIJK and WOERDEN which are now acting as diving vessels. The four small diving vessels Keeten, Jakhals, Mastgat and Zijpe were scrapped in 1962 and replaced by Argus, A 843, Hydra, A 850, Nautilus, A 849 and Triton, A 848.

Disposals

The gate vessels Abraham Crijnssen, Abraham van der Hulst, Jan van Gelder and Pleter Florisz, former minesweepers used for storing net defence gear, were transferred early in 1962 to the various sea cadet corps as training ships.

The anti-submarine experimental ship Paets van Troostwijck (ex-Sud III, ex-Istre, ex-Thor fr.), former German whaler used for submarine detection, was scrapped in Jan. 1963.

Weather Ships

Weather Ships
The weather observation ships Clrrus (ex-U.S.S. Abliene, PF 58) and Cumulus (ex-U.S.S. Forsyth, PF 102), former patrol frigates, were replaced by a new weather observation ship, Cumulus, specially built for this work. In May 1962 her keel was laid at the yard of the N.V. Gebr. van der Werf at Deest (near Nijmegen), Launched on 22 Dec. 1962, Taken over on 18 Apr. 1963. Measurement: 1,974 tons gross. Dimensions: Length 233 (o.a.), 203 (pp.), Beam 41 feet, Draught 15 feet, Machinery: 6-cyl, Werkspoor diesel. B.H.P.: 1,400=12 kts. Crew 62. She is operated by the Ministry of Transport and manned by mercantile personnel.

DIVING TENDER (Duikwerkschip)

CERBERUS

680 tons light, 780 tons standard (902 tons full load) $165\times33\times10$ feet 1—3 inch, 4—20 mm. AA. Displacement:

Dimensions:

Guns: Diesel electric. 1 shaft, B.H.P.: 1,500=12.8 kts.

Complement:

Former netlayer and boom defence vessel. Built by Bethlehem Steel Company, Staten Island. Launched in May 1952. Completed on 10 Nov. 1952. Transferred from the U.S. in Dec. 1952. Equipped as salvage vessel and diving tender in 1961 to replace Hercules, but she retains her netlaying capability. Pennant No. A 895.



CERBERUS

1965, Royal Netherlands Navy, Official

LANDING CRAFT (Landingsvaartuigen)

L 9609 (ex-Kais)

Measurement: Dimensions: Guns:

468 tons gross $137\times36\frac{1}{4}\times4\frac{1}{2} \ \mbox{feet} \\ 4-20 \ \mbox{mm. AA.} \\ 2 \ \mbox{Kromhout diesel engines. B.H.P.; } 540=8.5 \ \mbox{kts.}$ Machinery: Complement:

eurli Built in 1954 by Arnhemsche Scheepsbouw Mij., Arnhem. Taken over from Nederl, Ieuw Guinea Petroleum Mij. on 4 June 1960. Stationed in the Netherlands Antilles.



L 9609

1965, Royal Netherlands Navy, Official

L 9521 L 9526

L 9521
General
Now officially rated as LCA Type. L 9505, L 9508, L 9509, L 9516 and L 9519
were scrapped in Jan. 1964.
There are also ten new landing craft made of plastic (polyester) L 9510-9515,
9517 9518, 9520 and 9522, 13.6 tons, 46½×11½×6 feet. Rolls Royce diesel, B.H.P.:
200= 12 kts., all commissioned in 1962-63, except L 9520 in 1964.

Disposals

The two landing craft of the former British LCT (7) type, L 9601 (ex-LT 5, ex-LCT 7031) and L 9606 (ex-LT 10, ex-LCT 7125), were officially deleted from the list in 1966, as were the two of the former LCM type, L 9661 (ex-LU 1, ex-LCM 408) and L 9662 (ex-LU 2, ex-LCM 451).

FAST COMBAT SUPPORT SHIP

POOLSTER

Displacement: Measurement:

Guns: Aircraft:

16,800 tons full load
10,000 tons deadweight
515 (pp.), 552½ (o.e.)×66½×27 feet
2—40 mm. AA.
Capacity: 5 helicopters (official complement 3 SH-34 J)
Steam turbines. S.H.P.: 22,500=21 kts. (max.) service speed 18 kts. Machinery:

General

A new fast fleet replenishment tanker and supply ship (Bevootradingsschip). Built by Rottedam Dry Dock Co. Laid down on 18 Sep. 1962, Launched on 16 Oct. 1963. Trials mid-1964. Commissioned on 10 Sep. 1964. Equipped with a helicopter 1963, Tr

There is also an immobile tanker, A 876 (ex-Eng), based at Den Helder.



POOLSTER

1966, Wright & Logan

TRAINING SHIPS (Opleidingsvaartuigen)

HENDRIK KARSSEN (ex-Y 807, ex-RC 11, ex-De Mok 1)

Displacement: 172 tons standard (185 tons full load)

172 tons standard (185 tons full load)

137½ (o.a.) 114 (pp.)×20½×5½ feet

2—20 mm. AA.

Machinery: 2 Kromhout diesels. B.H.P.; 180=11 kts.

General: 18

General
Built by Rijkswerf Willemsoord, Launched in 1939. Equipped with water monitors for fire fighting. Renamed Hendrik Karssen in 1954. Former midshipmen tender, Pennant No. A 857, now rated as a training ship, Pennant No. Y 8102.



HENDRIK KARSSEN

1966, Royal Netherlands Navy, Official

HOBEIN (ex-Doornbos, ex-Dornbusch)

132 tons
92 (o.o.), 83\frac{1}{2} (pp.)\times 19\frac{1}{2}\times 5\frac{1}{2} feet
1—40 mm. AA., 1—20 mm. AA.
Diesel. B.H.P.: 250=8.5 kts. Displacement: Dimensions: Guns: Machinery:

Complement: General

Formerly German. Used as a navigational training ship for midshipmen. Pennant No. Y 8101 (ex-P 882). Renamed Hobein in July 1952.

URANIA (ex-Tromp)

Displacement: Dimensions: Machinery: Complement: 38 tons 72×16½×10 feet Diesel, H.P.: 65 15

Schooner used for training in seamanship. Commissioned on 23 Apr. 1938. Pennt No. Y 8050. nant No.

(van Kinsbergen, former frigate, ex-gunboat, is now instruction ship at the Technical Training Centre in Amsterdam).

TENDER (Hulpschip)

MERCUUR

274 tors standard (290 tons full load)
137½ (pp.), 140 (o.a.)×23×9 feet
Diesel engine. B.H.P.: 375=12 kts. (see Notes) Displacement: Dimensions:

Machinery: Complement:

General

General

Mercuur was built by Rijkswerf Willemsoord. Launched on 26 Feb. 1936. Tender Torpedo School, Pennant No. A 829. Rebuilt in 1960, triple expansion replaced by a diesel engine, and guns removed. A second tender to the Torpedo School VAN BOCHOVE, was built under the 1961 Navy Estimates. A torpedo recovery vessel, she was ordered in Oct. 1961 from the Zaanlandsche Scheepsbouw Mij at Zaandam, launched on 20 July 1962 and commissioned in Aug. 1962; steel vessel with Schottelroepropeller., diesels. B.H.P.: 140; 97½×18½×6 feet. 15 tons. Pennant No. A 923.

TUGS (Sleepboten)

WAMANDAI

159 tons standard (185 tons full load) $89\frac{1}{2}\times21\frac{1}{3}\times7\frac{1}{2}$ feet 2—20 mm, AA. Diesel. B.H.P.; 500=11 kts. Displacement:

Dimensions:

Machinery:

General
Built by Rijkswerf, Willemsoord, Den Helder. Launched on 28 May 1960. Equipped with salvage pumps and fire fighting equipment. Pennant No. A 870 (ex.-Y 8035). Stationed in the Netherlands Antilles since 1964.

WAMBRAU

154 tons standard (184 tons full load) $86\frac{1}{2}$ (o.a.)×20½×7½ feet 2—20 mm. AA. Werkspoor diesel and Kort nozzle. B.H.P.: 500=10.8 Displacement; Dimensions;

Guns:

Machinery: kts.

General

Built by Rijkswerf Willemsoord. Launched on 27 Aug. 1956. Completed on 8 Jan. 1957. Equipped with salvage pumps and fire fighting equipment. Stationed at Den Helder. Pennant No. A 871.

HERCULES (ex-Walcheren XII, ex-Atlas) Displacement:

Dimensions: Guns:

400 tons standard (440 tons full load) 142×29×15 feet 2—20 mm. AA.
M.W.M. diesel. B.H.P.; 840=12 kts. Machinery:

Complement:

Built as a tug for the German Air Force Flotilla. Launched by Nobiskrug Dockyard, Rendsberg, in 1944. Completed in Amsterdam in 1950. Fitted with pumps and salvage ear for use as salvage vessel and diving tender and commissioned on 18 Jan. 1951, but after Cerberus was equipped as salvage vessel she was used as a tug only. Pennant No. A 828. Photograph in the 1957-58 edition.

RERKEL

DINTEL DOMMEL

IISSEL

Displacement:

139 tons standard (163 tons full load) 82 (o.a.) \times 20½ \times 7½ feet Werkspoor diesel and Kort nozzle. B.H.P.: 500

General

Harbour tugs built for the Royal Netherlands Navy at the yard of H. H. Bodewes, Millingen. They were specially designed for use at Den Helder. Completed on 27 Dec. 1956. 23 Jan. 1957, 27 Feb. 1957 and 27 Mar. 1957, respectively. Pennant Nos. Y 8037-Y-8040. Disposals

The tugs Orkaan and A 847 (ex-MV 4, ex-Hollandia) former, trawler and auxillary minesweeper, were stricken in 1961. Orkaan was sold to Greece.

ROYAL NEW ZEALAND NAV

Naval Board

Chairman: (Minister of Defence)
The Hon. Dean J. Eyre, M.P.

First Naval Member and Chief of Naval Staff: Rear Admiral J. O'C. Ross, C.B.E.

Second Naval Member (Personnel): Commodore B. E. Turner, O.B.E., D.S.C.

Third Naval Member (Supply, Transport and Commodore F. T. Healy Works): Deputy Secretary of Defence (Navy): Mr. W. Hutchings.

Deputy Head of New Zealand Defence Liaison Staff, London: Captain J. F. McKenzie, O.B.E.

Naval & Air Attaché in Washington: Air Commodore Kenneth W. Trigance, O.B.E., D.F.C., Q.H.A.D.C.

Personnel

2,886 officers and ratings January 1960: 2,865 1961: officers and ratings January 1962: ratings January officers and 2,785 officers and 3,059 officers and January 1963: ratings 1964: January ratings 1965: 2,818 officers and january ratings 1966: 2,950 officers and ratings January

Mercantile Marine

Lloyd's Register of Shipping: 140 vessels of 227,632 tons gross

Silhouettes

Scale: 150 ft=1 inch



OTAGO, TARANAKI





GENERAL PURPOSE FRIGATE (A/S)

Pennant No.

F 55

WAIKATO

I "Leander" Class. Improved Type 12

New Construction

1st Rate (Anti-Submarine Versatile Type)

Displacement:

2,305 tons standard (2,800 tons

Dimensions:

Guided weapons:

A/S weapons:

Aircraft:

2,305 tons standard (2,800 tons full load)
363 (w.l.), 370 (o.a.)×41×
18½ (max.) feet
2—4.5 inch (1 twin turret)
1 quadruple launcher for "Seacat" anti-aircraft missiles,
1 "Limbo" three-barrelled depth charge mortar
1 Wasp lightweight helicopter armed with homing torpedoes
2 sets double reduction geared turbines. 2 shafts. S.H.P.:
30,000=30 kts.

Machinery: turbines. 2 s 30,000=30 kts.

Boilers: Complement:

253 (17 officers, 236 ratings)

Ordered on 14 June 1963 (announced by the High Commission for New Zealand in London. Scheduled to be commissioned on 16 Sep. 1966.

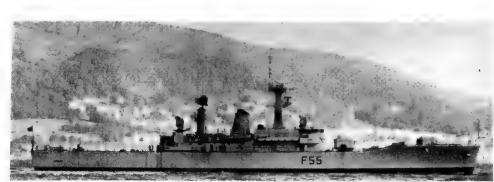
"LOCH" Class

Laid down Launched Completed

18 Feb. 1965

16 Sep. 1966

10 Jan. 1964



Harland & Wolff Ltd., Belfast

WAIKATO (on Contractors' Sea Trials)

July 1966, Royal New Zealand Navy, Official

ANTI-SUBMARINE FRIGATE (R.N.)

I "Whitby" Class. Type 12 1st Rate (Anti-Submarine Quality Type)

Displacement: 2,150 tons standard (2,560 tons 2,150 tons standard (2,560 tons full load)
360 (w.l.), 369½ (o.a.)×41×
17½ (max.) feet
2—4.5 inch (1 twin turret), 2
—40 mm. Bofors AA. (1 twin),
Suppressed
2 "Limbo" three barrelled depth Dimensions:

Guns:

Tubes: A/S weapons:

Machinery:

2 sets double reduction geared steam turbines. 2 shafts. S.H.P.: 30,430=31 kts. (max.), Boilers:

2 Babcock & Wilcox 370 tons 221 (11 officers, 210 ratings) Complement: General

General
It was announced on 30 Mar 1966 that the New Zealand Government would hire H.M.S. Blackpool for four to five years until a new frigate for New Zealand was built. Blackpool was commissioned as a unit of the Royal New Zealand Navy on 16 June 1966. She replaced H.M.N.Z.S. Royalist.
Disposals of Light Cruisers
Of the two light cruisers of the Improved "Dido" class, Royalist was decommissioned on 4 July 1966 and reverted to the control of the Royal Navy for disposal; and Black Prince reverted to Royal Navy control in Dec. 1961 and was scrapped in Japan in May 1962.

Pennant No. Builders Laid down Launched Completed BLACKPOOL Harland & Wolff Ltd., Belfast 20 Dec. 1954 14 Feb. 1957 13 Aug. 1958



BLACKPOOL

1966. Official

ANTI-SUBMARINE FRIGATES

2 "Rothesay" Class. Type 12 1st Rate (Anti-Submarine Quality Type)

2,144 tons standard (2,557 tons full load) 360 (pp.), 370 (o.a.)×41×12 Displacement: Dimensions:

feet 2—4-5 inch (1 twin turret)
1 quadruple launcher for "Seacat" anti-aircraft missiles
12—21 inch (8 single A/S, two Guns: Guided weapons: Tubes:

twin)

2 Limbo three-barrelled depth A/S weapons:

Machinery:

2 Limbo three-barrelled depth charge mortars 2 sets double reduction geared steam turbines. 2 shafts. S.H.P.: 30,430=over 30 kts. 2 Babcock & Wilcox Boilers:

Complement:

General
Taranaki was ordered as a "Rothesay" class anti-submarine frigate (announced by J. Samuel White & Co.
on 22 Feb. 1957). Otago was ordered earlier (officially
stated on 26 Feb. 1957 that New Zealand had taken
over the contract for the anti-submarine frigate
Hastings, originally ordered from John I. Thornycroft &
Co. in Feb 1956 for the Royal Navy). Both vessels are
generally similar to those in the Royal Navy, but were
modified to suit New Zealand conditions.

Pennant No. OTAGO (ex-Hastings)

TARANAKI

F 148

Builders Bullders
John I. Thornycroft
& Co. Ltd., Woolston,
Southampton
J. Samuel White
& Co. Ltd., Cowes,
Isle of Wight Launched 11 Dec. 1958

Completed 22 June 1960

28 Mar. 1961 19 Aug. 1959



1966, Royal New Zealand Navy, Official OTAGO



TARANAKI ("Seacat" guided missile launcher on step of after superstructure)

1966, Royal New Zealand Navy, Official

KANIERE (ex-Loch Achray)

Pennant No. F 426

Builders
Smith's Dock Co. Ltd., South Bank-on-Tees

Launched 7 July 1944

Completed

I "Loch" Class

2nd Rate (Anti-Submarine Escort Type)

Displacement: 1,435 tons standard (2,260 tons

Dimensions:

1.435 cons standard (2,260 tons full load)
286 (pp.), 307½ (o.a.)×38½×
14½ (max.) feet
1—4 inch, 6—20 mm. AA.
2 Squid triple-barrelled depth charge mortars
Triple expansion. 2 shafts.
1.H.P.: 5,500=19.5 kts.
2 Admiralty 3-drum type
724 tons
114 A/S weapons:

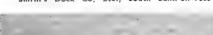
Machinery:

Boilers: Oil fuel:

Complement:

Six frigates of the "Loch" class were purchased from Great Britain in 1948, and renamed after New Zealand lakes. Koniere is used as an alongside training ship at Aukland.

Photographs
A photograph of Rotolti appears in the 1958-59 to
1962-63 editions, of Hawea in the 1951-52 to 1957-58
editions, and of Pukaki in the 1962-63 to 1965-66 editions.



Laid down 13 Dec. 1943



KANIERE

Disposals

Of three sister ships, Taupo and Tutira were sold for scrap on 15 Dec. 1961, and Hawea and Pukaki were

Added 1966, Royal New Zealand Navy, Official

sold for scrap at Hong Kong in Sep. 1965. Rotolti is laid up in reserve.

I "River" Class

Builders Pennant No. Launched Mort's Dock, 25 Mar. 1964 Sydney LACHLAN

1,420 tons standard (2,220 tons Displacement:

1.410 tons standard (2,210 tons full load)
301\pmu36\pmu36\pmu3212 feet
Triple expansion. 2 shafts. 1.H.P.:
5,500=20 kts.
2 Admiralty 3-drum type
140 Dimensions: Machinery:

Boilers:

Complement:

General
Former Australian "River" class frigate. On loan until she was purchased outright in 1962. She is emplayed surveying the New Zealand coast. Forecastle deck extended aft from the shelter deck, to the quarter deck. Guns removed on conversion for survey duties. A helicopter platform 50 feet by 30 feet, standing 7 feet above the quarter deck, was added in 1966. General

SURVEY SHIP (Ex-Frigate)



LACHLAN

1964, Royal New Zealand Navy, Official

4 "Bathurst" Class

Displacement: 790 tons standard (1,025 tons (o.a.) 162 (pp.)×31×9 $\frac{1}{2}$ feet 1-4 inch. 1-40 mm. AA. Guns: Machinery:

Triple expansion: 2 shafts. I.H.P.: 1,800=15 kts.
2 Admiralty 3-drum small tube 85 Boilers:

Complement:

General These four vessels were given to New Zealand by Australia in 1952. Fishery Protection

Klama was recommissioned in 1966 for fishery protection duties.

Training

Inverell was recommissioned on 15 Aug. 1965 as a

training ship for new entry ratings, replacing the frigate Rotolti. Her sweeping gear was removed and her deck-house extended further aft.

Photographs A photograph of *Kiama* appears in the 1953-54, 1954-55 and 1955-56 editions, of *Echuca* in the 1953-54 to 1959-1960 editions, and of *Stawell* in the 1956-57 to 1965-66 editions. Coastal Minesweepers

The Royal Navy coastal minesweepers HICKLETON and SANTON were manned by the Royal New Zealand Navy, commissioning at Singapore on 10 Apr. 1965 for patrol duties in Malaysian waters.

ESCORT MINESWEEPERS

Pen. No M 252 M 233 M 353 M 348 Launched Completed Comp. 17 Jan. 2 May 26 Jan. 7 Aug. 17 jan. 1942 2 May 1942 3 July 1943 3 Apr. 1943 ECHUCA Williamstown Dockyard, Melbourne 22 Feb. 1941 7 Dec. 1941 2 Nov. 1942 1943 1943 1944 Mort's Dock, Sydney Evans Deakins, Brisbane Williamstown Dockyard, Melbourne INVERELL KIAMA



INVERELL

1966. Royal New Zealand Navy, Official

PATROL VESSEL I "Bird" Class (Corvette type)

TUL P 33

600 tons standard (825 tons full load) $156\times30\times14$ feet 1—4 inch, 1—2 pdr. Triple expansion. I.H.P.: I,000=14 kts. 1 cylindrical Displacement: Dimensions: Guns: Machinery: Boilers:

General
Anti-submarine and Minesweeping trawler of the corvette type, Built by Henry Robb Ltd., Leith. Laid down on 19 Mar. 1940. Launched on 26 Aug. 1941. Completed on 5 Dec. 1941. Engined by Plenty & Son. Commissioned as a Fleet Auxiliary for duties in Oceanographical Research.

Disposal

Sister ship Kiwi was sold in 1962, and broken up in Auckland in 1965.



TUI

1965, Royal New Zealand Navy, Official

SEAWARD PATROL CRAFT

12 HDML Type

AKU ex-Wakefield (SDML 3565. ex-Q 1197)

(AHAWAI, ex-Tamaki (SDML 3555)

(AKO (SDML 3551, ex-Q 1183)

(ANGA (SDML 3567, ex-Q 1185)

(ANGA (SDML 3567, ex-Q 1185)

(ANGA (SDML 3567, ex-Q 1185)

(ANGA (SDML 3567, ex-Q 1188)

(ANGA (SDML 3564, ex-Q 1387)

(ANGA (SDML 3564, ex-Q 1387)

(ANGA (SDML 3564, ex-Q 1387)

Displacement: Dimensions: Guns: Machinery: Complement:

46 tons standard (54 tons full load) $72\times16\times5\frac{1}{2}$ feet 1-20 mm. AA., several M.G. (not fitted at present) Diesel. 2 shafts. B.H.P.: 320=12 kts.

General
Originally known as Harbour Defence Motor Launches. All built in various yards in the United States and Canada and shipped to New Zealand. SMDLs Takapu and Tarapunga are commissioned as surveying MLs, and operate with Lachlan. SDMLs Mako, Manga and Paea have been converted with lattice masts surmounted by a radar aerial, and are employed on fishery protection duties. SDML 3565 is American built. A photograph of Mako appears in the 1958-59 to 1962-63 editions, and of Paea in the 1963-64 to 1965-66 editions.



MANGA (lattice mast and radar) 1966, Royal New Zeland Navy, Official

ANTARCTIC SUPPORT SHIP

ENDEAVOUR (ex-U.S.S. Namakagon, AOG 53)

Displacement: Dimensions: Machinery: Complement:

1,850 tons light (4,335 tons full load) 292 (w.l.), $310\frac{1}{2}$ (o.a.) \times 48 $\frac{1}{2}$ \times 15 $\frac{1}{2}$ feet G.M. diesels. 2 shafts. B.H.P.; 3,300=14 kts. 70 officers and ratings

General

General
Former U.S. "Patapsco" class petrol carrier. Built by Cargill, Inc., Savage, Minn.
Laid down on 1 Aug. 1944, Launched on 4 Nov. 1944. Refitted and strengthened
for service in ice and transferred on loan to the Royal New Zealand Navy in Oct,
1962 under the Military Aid Program and re-named Endeavour. Pennant No. A 184.



ENDEAVOUR

1966, Royal New Zealand Navy, Official

Disposal of former Antarctic Support Ship H.M.N.Z.S. Endeavour (ex-M.V. John Biscoe, ex-H.M.S. Pretext, ex-U.S.S. AN 76), former netlayer, boom defence vessel, survey ship, and Antarctic support ship in turn, was declared surplus and sold in 1961.

TENDERS

ARATAKI

MANAWANUI

General
Steel tugs. Length: 75 feet. Diesel. Arataki is used as a dockyard tug and Manawanul as a diving tender.

Disposals

The lighthouse tender Hauraki (ex-Endeavour) was officially deleted from the list in 1964.

Of the two naval stores carriers, Lander 1 was officially delated from the list in 1964, and Coastguard was sold as a fishing boat on 7 July 1961. The two former Fairmile "B" Type motor launches Maori and Philomel, converted to local naval tramsports and passenger harbour craft, were officially stricken from the list in 1964.

NICARAGUA

The Coast Guard is under the authority of the National Guard. It is reported to consist of six wooden patrol boats, four 90 feet and two about 80 feet long. There is also a former patrol boat 75 feet, wooden, built in 1925, used for training. There are small patrol boats on the east and west coasts to prevent smuggling.

Guns:

NIGERIA

Administration

Commodore Commanding The Nigerian Navy: Commodore Joseph Etim Akinwole Wey, N.N.

Personnel

80 officers and 820 ratings in 1966; but this figure is to be increased as opportunity offers

I New Construction

1,724 tons standard, 1,752 tons metric (2,000 tons full load) 341½ (pp.), 360½ (o.a.)×37×11 feet Displacement: Dimensions:

11 feet 2—4 inch d.p. (twin mounting) remotely controlled, 4—40 mm. AA. (single) 1 triple-barrelled depth charge

A/S weapons: mortar with fire control
4 MAN diesels. 2 shafts. B.H.P.:
16,000=26 kts.
216 officers and ratings Machinery:

Complement:

General General
Anti-aircraft and arti-submarine frigate built in the
Netherlands. Cost £3,500,000. Commissioned in Sep.
1966. Helicopter platform laid on aft. A starboard bow
view of this ship appears in the 1965-66 edition, page
459 (Addenda)
Nomenclature
In 1965 the name of this vessel was altered to
Nigeria from the previous provisional name Republic
suggested in 1964, thus reverting to the name originally
considered in 1963 (see 1963-64 edition).

FRIGATE

Pennant No. F 87 NIGERIA

Builders Wilton, Fijenoord N.V. Laid down 9 Apr. 1964

Launched 29 Apr. 1965

Completed 16 Sep. 1965



NIGERIA

1966, Nigerian Navy, Official

SAPELE (ex-MSML 2217)

PATROL VESSEL

I PC Type

OGOJA (ex-Queen Wilhelmina, ex-U.S.S. PC 468)

320 tons standard (413 tons full load)
165 (w.l.), 173 { (o.a.)×23×6 } feet
1-3 inch d.p., 1-40 mm. AA., 5-20 mm. AA.
Fairbanks diesel. 2 shafts. B.H.P.: 2,880=20 kts.
60 tons
5.000 miles at 10 kts. Displacement:
Dimensions:
Guns:
Machinery:
Oil fuel:
Radius:
Complement:

Whilst the new frigate above is being built this old patrol vessel is lent by the Royal Netherlands Navy to the Nigerian Navy. The former United States submarine chaser was built by Geo. Lawley & Sons, Neponset, Mass., having been launched on 30 Apr. 1942.



OGOIA

1965, Nigerian Navy, Official

SEAWARD DEFENCE BOAT

I "Ford" Type

ENUGU P 3137

Displacement: Dimensions: Guns: A/S weapons:

Machinery Complement: 120 tons standard (160 tons full load)
110 (pp.), 117½ (o.o.)×20×5 feet
1—40 mm. Bofors AA.
1 depth charge mortar aft. D.C. rails and D.C.
Davey Paxman diesels, Foden engine on centre shaft.
B.H.P.: 1,100=18 kts. (max.), 15 kts. sea speed
26 (4 officers and 22 ratings)

General General
The first warship built for the Nigerian Navy. Ordered from Camper and Nicholson's, Gosport, in 1960. Completed on 14 Dec. 1961 (accepted from builders). Sailed from Portsmouth for Nigeria on 10 Apr. 1962. Fitted with Vosper roll damping fins.



ENUGU

1965, courtesy Dr. Giorgio Arra

Disposal

The seaward defence motor launch Kaduna (ex-H.M.S. SDML 3515) P 07 was officially deleted from the Navy List in 1965.

Disposal of Escort Vessel

The escort vessel Nigeria, formerly the British "Algerine" class ocean minesweeper,
H.M.S. Hare, transferred to the Nigerian Navy on 21 July 1959, was scrapped
in Oct. 1962, it was officially stated. (She was surveyed in H.M. Dockyard, Chatham,
in May-June 1962, but was found to be beyond economical repair of boiler defects,
etc.)

The Presidential Yacht, N.N.S. Valiant was paid off and transferred to the Nigerian Inland Waterways Department, it was officially stated by Nigerian Naval Headquarters in 1966. See full particulars in the 1960-61 to 1965-66 editions.

MINESWEEPING MOTOR LAUNCHES

2 Fairmile "B" Type

CALABAR (ex-MSML 2223)

Displacement Dimensions:

Guns: Machinery: 85 tons
112 (o.a.)×18½×5 feet
2—20 mm. AA. (twin mounting)
2 Paxman diesels RPS 12 cyl. B.H.P.: 1,200=13 kts.
Sea speed 8 kts. (official revised figures 1966)

16 to 18

Complement: General Purchased from the Royal Navy in 1959, Pennant Nos. P 08 and P 09, respectively. A photograph of Calabar appears in the 1963-64 edition.



SAPELE

1966, Nigerian Navy, Official

LANDING CRAFT

I L.C.T. (4) Type

LOKOJA (ex-LCT (4) 1312)
Displacement:
Dimensions: 350 tons standard (586 tons full load)
1871×381×41 feet
2—20 mm. AA.
2—Paxman diesels. B.H.P.: 920=10 kts. Guns:

Machinery: Complement:

General urchased from the Royal Navy in 1959. Allocated the name Lokoja in 1961.



LOKOJA

1965, Nigerian Navy, Official

SURVEYING VESSELS

PATHFINDER P 06

Measurement: Dimensions: Guns: Machinery: Complement:

544 tons gross
154½×27×11 feet
1—40 mm. AA.
2 sets triple expansion engines. I.H.P.: 200=8 kts.
42

Built by J. Samuel White & Co. Ltd., Cowes, Isle of Wight, in 1954.

PENELOPE P 11

General

Measurement: Dimensions: Machinery: Complement:

79 tons gross
79\dagger \tau 72\dagger \tau 4\dagger feet
2_Gardner diesels. Speed 10 kts.

Built by Aldous Successors, Brightlingsea in 1959. Used for local survey duties. CHALLENGER P 10

Measurement:

114 tons gross $\begin{array}{l} 110\frac{1}{2}\times18\frac{1}{2}\times5 \text{ feet} \\ 1-40 \text{ mm. AA. Bofors AA.} \\ 3 \text{ Gleniffer diesels. Speed 13 kts.} \end{array}$ Dimensions: Guns: Machinery:

General
Built by Aldous Successors, Brightlingsea in 1955. Customs preventive duties.

ROYAL NORWEGIAN NAVY

Administration

Minister of Defence: Mr. Otto Grieg Tidemand.

Permanent Under-Secretary: Mr. Jacob Modalsli.

Commander-in-Chief:

Vice-Admiral Aimar Sörenssen, R.No.N.

Chief of Naval Staff:

Rear-Admiral Tore Holthe R.No.N.

Commander Coastal Fleet:

Commodore Sjur Östervold, D.S.C., R.No.N.

Chief of Staff (Operations):
Commodore Siguard Valvatne, D.S.O.
D.S.C., R.No.N.

Defence Attaché in London: Colonel Ole Tobias Mehn-Andersen,

R.No.A.F.

Assistant Defence Attaché in London:

Commander Julius Johan Meyer, R.No.N.

Assistant Naval Attaché in Washington:

Personnel

1966: 6,200 officers and ratings.

1965: 6,000 officers and ratings. 1964: 6,300 officers and ratings.

1963: 6,300 officers and ratings.

1962: 5,200 officers and ratings.

stant Naval Attaché in Washington: Since Mar. 1959 the suffix "R.No.N." has Commander Olaf Aage Mathisen, R.No.N. been used instead of "R.Nor.N."

Ships

Norwegian warships are referred to officially with the prefix K.N.M., equivalent to H.M.S.

Mercantile Marine

Lloyd's Register of Shipping: 2,742 ships of 15,641,498 tons gross

Silhouettes

Scale: 150 ft.=1 inch.





BRAGE, GOR, TYR, ULLER



BERGEN, STAVANGER



SUBMARINES (Undervannsbater)



	No.	Launched	Completed		
KAURA	S 315	16 Oct. 1964			
KINN	S 316	30 Nov. 1963	8 Apr. 1964		
KOBBEN	\$ 318	25 Apr. 1964	17 Aug. 1964		
KUNNA	5 319	16 July 1964	1 Oct. 1964		
KYA	S 317	20 Feb. 1964	15 June 1964		
SKLINNA	\$ 305	_	,		
SKOLPEN	\$ 306	_			
STADT	S 307				
STORD	5 308	_			
SYENNER	\$ 309				
ULA	S 300	19 Dec. 1964	_		
UTHAUG	S 304	8 Oct. 1965	16 Feb. 1966		
UTSIRA	\$ 301	11 Mar. 1965	1 July 1965		
LITSTEIN	S 302	19 May 1965	9 Sep. 1965		
UTVAER	S 303	30 June 1965	1 Dec. 1965		
CITALEN		,			

UTSTEIN



1966, Royal Norwegian Navy, Official

Displacement:

350 tons standard, 472 tons submerged 149×15×14 feet (officially re-

Dimensions:

vised figures)
8-21 inch (bow)
Diesels. Electric motors. 1 shaft,
B.H.P.: 1,200=17 kts. Tubes: Machinery:

Complement:

General
It was announced in July 1959 that the United States and Norway were to share equally the cost of these coastal submarines ordered under a modernisation programme, for delivery in 1964-67.
All 15 boats were built by Rheinstahl-Nordseewerke in Emden, West Germany. Of the same type as the German U 4 class but with somewhat stronger hulls to dive deeper.

Nomenclature

Nomenclature
These new coastal submarines were given names perpetuating those of submarines which recently served in the Royal Norwegin Navy, but have been discarded (see Disposals below) and some new names.

(see Disposals below) and some new names. Transfer
The new German coastal submarine U 3, which was lent to the Royal Norwegian Navy in 1962 for training and temporarily named Kobben with the pennant number S 310, was returned to the Federal German Navy in 1964. A new coastal submarine for the Royal Norwegian Navy named Kobben with the pennant number S 318, was completed in 1964 (see above).

The "U" group were named after features of the Norwegian seaboard, Ula being the name of the birthplace of Ulabrand the navigator.



1965. Royal Norwegian Navy, Official

KYA

Disposals
Of the former British "U" class Utsira (ex-H.M.S. Variance) was stricken from the Navy List in Dec. 1962, Utstein (ex-H.M.S. Venturer) in Jan. 1964, Ula (ex-H.M.S. Varne) in July 1964, Utwaer (ex-H.M.S. Viking) in Dec. 1964, and Uthang (ex-H.M.S.

Votary) in Oct 1965. Votary) in Oct 1965.
Disposals of ex-German VII C Type
Of the ex-German VII C type, Kinn (ex-U 1202)
was removed from the Royal Norwegian Navy List on
I June 1961, Kaura (ex-U 995) in Jan 1963, and
Kya (ex-U 926) in Mar. 1964.

2 Ex-British "Cr" Class

Dimensions

Guns: Tubes:

A/S weapons: Machinery:

Bergen: 1,710 tons standard, Stavanger, 1,786 tons standard (2,640 tons full load) 362½×35½×16 feet 4—4·5 inch d.p. 6—40 mm. AA. 4—21 inch (quadruple) see Anti-Submarine motes "Terme" ASW system; 4 D.C.T. Parsons geared turbines. 2 shafts S.H.P.: 40,000=34 kts. (trial speeds 31·5 kts. Bergen 32·8 Stavanger). Sea speed 32 khs 2, of 3-drum type 580 tons

Boilers: Oil fuel: Radius:

2, of 3-drum type 580 tons 2,800 miles at 20 kts, 241

Complement:

General

General
Former "Cr" class destroyers purchased from Great
Britain in 1946. Of entirely welded construction. Oslo,
which was fitted as the squadron leader, was decommissioned on 2 Apr. 1962, In Jan. 1964 she was transferred to the Reserve List as Pen. No. D 303, her
name having been given to the first of the new frigates
being built under the new construction programme.
Bergen and Stavanger will be decommissioned in 1966.
Anti-Submarine

being built under the new construction programme. Bergen and Stavanger will be decommissioned in 1966. Anti-Submarine

The torpedo tubes in Bergen were removed and replaced by "Terne" ASW system in 1964. In Stavanger the "Terne" ASW system has been installed without removing the torpedo tubes.

Disposals

Of the "Cr" class, Trondheim (ex-H.M.S. Croziers) was removed from the Navy List on 1 May 1961, and D 303 (ex-Oslo, ex-Crown) was removed from the list and scrapped in 1966.

and scrapped in 1700.

The former British destroyer Stord (ex-H.M.S. Success) of the "5" class, purchased from Great Britain in 1946, was stricken from the Navy List in 1959,

DESTROVERS

Builders . & Eng. Co. Ltd., Greenock Co. Ltd., Scotstoun, Glasgow Scotts' S.B.

Laid down 24 Nov. 1943 13 jan. 1944

Launched 6 Aug. 1945 12 Feb. 1945

Completed 6 Sep. 1946 6 Feb. 1946



BERGEN ("Terne" ASW system, no torpedo tubes)

1966. Wright & Logan



STAVANGER ("Terne" ASW system and tubes)

1966, Wright & Logan

FRIGATES

5 New Construction Destroyer Escort Type "Oslo" Class

Displacement:

1,450 tons standard (1,880 tons full load) 317×36×17 feet (revised offi-

Dimensions:

inch (2 twin mounts)

"Terne" ASW system

De Laval Ljungstrom double reduction geared turbines. S.H.P.:
20,000=25 kts. Guns: A/S weapons:

Machinery:

Complement:

General

General
Built under the five-year naval programme accepted
by the Norwegien "Storting" (Parliament) late in 1960.
While all the ships are being constructed in the
Norwegian Naval Dockyard, half the cost is being borne
by Norway and the other half is being paid by the
United States.
The design of these ships is similar to that of the
"Dealey" class destroyer escorts in the United States
Navy. They have traditional Norwegian destroyer or
torpedo boat names.
Engineering

Engineering
The turbines, of a new type, and auxiliary machinery, were all built by De Laval Ljungstrom, Sweden, at the company's works in Stockholm-Nacka.

Disposals

Of the three former British escort destroyers of the "Hunt" Class, Type 11, Haugesund (ex-H.M.S. Beaufort) and Tromsö (ex-H.M.S. Zetland) were removed

Laid down 1964 1964 Completed Builders 23 Aug. 1965 8 Jan. 1965 17 Jan. 1964 4 Feb. 1966 BERGEN F 301 F 304 F 300 F 303 Marinens Hovedverft, Horten NARVIK OSLO STAVANGER Marinens Hovedverft, Horten Marinens Hovedverft, Horten Marinens Hovedverft, Horten 1963 28 Jan. 1966 2 June 1966 TRONDHEIM 302 Marinens Hovedverft, Horten



OSLO

1966, Royal Norwegian Navy, Official

from the list in 1965 and sold, and Arendal (ex-H.M.S. Badsworth) was removed from the list on 1 May 1961. The former British escort destroyer Narvik (ex-H.M.S. Glaisdale) of the "Hunt" class, Type III, was removed from the list on 1 May 1961.

Of the three former Canadian frigates of the "River" Class, Draug (ex-H.M.C.S. Penetang) was removed from the list and sold in 1966, and Garm (ex-H.M.C.S. Toronto) and Troil (ex-H.M.C.S. Prestonian) were converted, respectively, into Torpedo Boat Depot Ship and Submarine Depot Ship in 1964 and 1965 and remamed Valkyrien and Horten see later page.

I Ex-U.S. AVP Type

HAAKON VII (ex-U.S.S. Gardiners Bay, AVP 39)

Displacement:

1,766 tons standard (2,800 tons

Dimensions

Machinery:

Guns:

Complement:

1.766 cons standard (2,800 cons full load) 300 (w.l.), $310\frac{1}{4}$ (o.a.)× $41\frac{1}{4}$ × $13\frac{1}{2}$ (max.) feet 1.—5 inch 8.—40 mm. AA., 4.—20 mm. AA. 2 sets F.M. diesels. 2 shafts. B.H.P.: $6,080=18\cdot2$ kts. 2.15 ship's company, plus 86 officer cadets and petty officer apprentices (accommodation for 367)

General General Formerly a United States seaplane tender (small) of the AVP type. Built by Lake Washington Shipyard Houghton, Wash, Laid down on 14 Mar. 1944, launched on 2 Dec. 1944 and completed on 11 Feb. 1945. Transferred from the United States Navy to the Royal Norwegian Navy on 17 May 1958 and converted and rearmed for use as a training ship for midshipmen and naval cadets.

TRAINING SHIP



HAAKON VII

1959, Wright & Logan

COASTAL MINELAYERS

4 "Gor" Class (ex-U.S. MSF Type)

BRAGE (ex-U.S.S. Triumph, MMC 3, ex-MSF 323, ex-AM 323)
GOR (ex-U.S.S. Strive, MMC 1, ex-MSF 117, ex-AM 117)
TYR (ex-U.S.S. Sustain, MMC 2, ex-MSF 119, ex-AM 119)
ULLER (ex-U.S.S. Seer, MMC 5, ex-MSF 112, ex-AM 112)

Dimensions: Guns:

890 tons standard (1,250 tons full load)
215 (w.l.), 221½ (o.a.)×32½×16 (max.) feet
Brage, Gor, Tyr: 1—3 inch, 50 cal.: 4—20 mm. AA.
(2 twin); Uller: 1—3 inch, 50 cal., 1—40 mm. AA.
Brage, Gor, Tyr: 2 Hedgehogs. 3 D.C.T.
Uller: "Terne" ASW system, 1 D.C.T.
G.M. diesels with electric drive. 2 shafts.
B.H.P.: 2,070=16 kts.
83

A/S weapons:

Machinery:

Complement:

General General Former United States Coastal Mirelayers (MMC) originally built as Ocean Minesweepers (AM) of the large steel-hulled type ("Auk" class) reclassified as Fleet Minesweepers (MSF) in Feb. 1955. Gor, Tyr and Uller were built by the American Shipbuilding Co., Cleveland, Ohio, and Brage by Associated Shipbuilders. Gor and Tyr were converted into coastal minelayers at Charleston Naval Shipyard for transfer to the Royal Norwegian Navy under the MDA Programme late in 1959, and Brage was converted at the same yard in 1960, but Uller was converted at a Norwegian shipyard.

Name	Pennant No	. Laid down	Launched	Completed
Brage	N 49	27 Oct. 1942	25 Feb. 1943	3 Feb. 1944
Gor	N 48	17 Nov. 1941	16 May 1942	27 Oct. 1942
Tyr	N 47	17 Nov. 1941	23 June 1942	9 Nov. 1942
Uller	N 50	28 Nov. 1941	23 May 1942	21 Oct. 1942



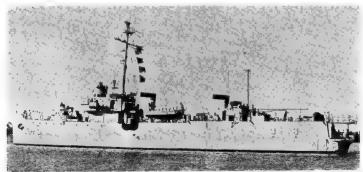
BRAGE

1966, courtesy Godfrey H. Walker, Esq.,



TYR

1963, Wright & Logan



GOR

1960. Royal Norwegian Navy, Official

Disposals

Disposals

The two coastal minelayers of the "Otra" class, Ottra and Rauma, were stricken from the Navy List in Apr. 1963.

The two coastal minelayers of the converted U.S. LSM type, Vale (ex-U.S.S. LSM 492) and Vidor (ex-U.S.S. LSM 493), were returned to the U.S. on 1 Oct. 1960, and transferred to Turkey under the MA Programme in Nov. 1960.

The two auxiliary minelayers of the converted British tank landing craft type, Reinöysund and Vargsund were removed from the Navy List in 1960.

The two ocean minesweepers

The two ocean minesweepers of the U.S. MSO type, Lagen (ex-MSO 498) and Namsen (ex-MSO 499), taken over by the Royal Norwegian Navy on 27 Sep. and 1 Nov. 1955, respectively, were transferred to the Royal Belgian Navy in 1966, having been exchanged against three coastal minesweepers of the Belgian U.S. MSC type, see "Sauda" class in col. 2.

Disposals of Fleet Minesweepers

The two former British "Bangor" class fleet minesweepers of the diesel type were removed from the Navy List, Tana on 1 May 1961 and Glomma on 1 Dec.

PATROL VESSELS

2 New Construction. "Sleipner" Class

AEGER P 951

SLEIPNER P 950

Displacement: Dimensions: Guns: A/S weapons: Machinery:

Complement:

600 tons standard (780 tons full load)
227½ (o.a.)×26½×15 (max.)
1—3 irch; 1—40 mm.
"Terne" ASW system
4 Maybach diesels. B.H.P.: 9,000=over 20 kts.

General
Under the five years programme only two instead of the originally planned five new patrol vessels were built. Sle/pner was launched on 9 Nov. 1963 at the Nylands Verksted shipyard, Oso, and completed on 29 Apr. 1965. Aeger, originally to have been named Balder, was launched on 24 Sep. 1965



SLEIPNER

1965, Royal Norwegian Navy, Official

COASTAL MINESWEEPERS

10 "Sauda" Class U.S. MSC (ex-AMS) Type

ALTA M 314 GLOMMA M 317 KVINA M 332

OGNA M 315 SAUDA (ex-U.S.S. AMS.102) M 311 SIRA (ex-U.S.S. MSC 132) M 312

TANA M 313 TISTA M 331 UTLA M 334 VOSSO M 316

Displacement:

Dimensions: Guns: Machinery: Oil fuel:

333 tons standard (384 tons full load) 144×28×8½ (max.) feet 2—20 mm, AA. G.M. diesels. B.H.P.: 880=13·5 kts. G.M. di 25 tons

38

Complement:

General Sauda was launched in July 1953 by Hodgeson Bros, Gowdy & Stevens, East Boothbay, Maine and completed on 25 Aug. 1953. Sira was completed 28 Nov. 1955. Hull is of wooden construction. Five wooden coastal minesweepers of the non-magnetic type were built in Norway with engines from the U.S.A. Launched on 21 July 1954 (Kvina), 18 June 1954 (Ogna), I June 1954 (Tista), 16 June 1954 (Vasso) and 2 Mar. 1955 (Utla), 12 July 1955 (Kvina) and 15 Nov.1955 (Utla). Kvina, Ogna and Utla were built by Båtservice Verft A/S Mandal. Tista by Forende Batbyggerier, Risör and Vosso by Skaaluren Skibsbyggeri, Rosendal.

Transfer and Exchange
Alta, Gloma and Tana were taken over from the Royal Belgian Navy in May,
Sep. and Mar. 1966, respectively, having been exchanged against two Norwegian
ocean minesweepers of the U.S. MSO type. They were formely Arlon M 915
(ex-MSC 104), Bastogne M 916 (ex-MSC 151) and Rosselaere M 914 (ex-MSC 103).

Disposals of Ex-U.S. YMS Type
Alta (ex-NYMS 379), Vinstra (ex-NYMS 247) and Vorma (ex-NYMS 480)
were stricken from the Navy List in 1959, Begna (ex-NYMS 381) and Driva
(ex-NYMS 377) in 1961, Rana (ex-NYMS 406) in Mar. 1962, and Gaula ex-NYMS
305) on 26 June 1963.

Disposals of Ex-British MMS II Type
Vefsna (ex-MMS 1068) was stricken from the Navy List in 1962, and Orkla
(ex-MMS 1085) in 1964.



UTLA

1966, Skyfotos

CONTROLLED MINELAYERS

"MUL 12" Type

BORGEN N 51

Displacement: Dimensions: Machinery:

282 tons standard $94\frac{1}{2}$ (pp.), $102\frac{1}{2}$ (o.a.) \times 26 $\frac{1}{4}\times$ 11 feet 2 G. M. diesels. 2 Voith-Schneider propellers. B.H.P.: 330=9 kts.

Launched on 29 Apr. 1960. There is also an old minelayer for controlled mines. Both of these coastal artillery ships are part of the Navy.

TORPEDO BOATS

20 "Tield" Class

DELFIN P 386 ERLE P 390 FALK P 350 GEIR P 389	HAI P 381 HAUK P 349 HVAL P 383 JO P 346	LAKS P 384 LOM P 347 LYR P 387 RAVN P 357 SEL P 382	SKARV P 344 SKREI P 380 STEGG P 348 TEIST P 345
GRIBB P 388	KNURR P 385	SEL P 382	TJELD P 343

64 tons light, 70 tons standard (82 tons full load)
75½ (pp.), 80⅓ (o.a.)×24½×6½ (max.) feet
1—40 mm. AA., 1—20 mm. AA.
4—21 inch
2 Napier Deltic Turboblown diesel engines. 2 shafts.
B.H.P.: 6,200=45 kts.
450 miles at 40 kts., 600 miles at 25 kts.
18 to 22 Displacement: Dimensions: Guns:

Tubes: Machinery:

Radius: Complement: 18 to 22

General

General
Build by Batservice Verft A/S. The first boat, Tjeld was commissioned in June 1960, and the last boat of the first group of twelve in 1962. The first of the second group of eight built under the new five year programme, Sel, was launched on 7 Mar. 1963 and the last, Delfin on 7 Jan 1966 (she was commissioned on 20 May 1966) and all the 20 boats of this class are now completed. Formely known as Motor Torpedo boats but officially classified as Torpedo Boats in 1965.

A photograph of Tjeld appears in the 1961-62 and 1962-63 editions, and of Gribb in the 1963-64 to 1965-66 editions.

in the 1963-64 to 1965-66 editions.

Transfers

Two of this type were acquired by the U.S.A. in 1963 and renumbered PTF-3 and PTF-4, four in Apr. 1964 (PTF 5 to 8) and eight in Sep. 1964 (PTF 9 to 16).



TIEST

1966. Wright & Logan

64 tons light, 69 tons standard (75 tons full load)
75 (pp.), 80½ (o.a.)×24½×6½ feet
2—40 mm. AA. Bofors
4—21 inch
2 Napier Deltic diesels, B.H.P.: 5,000=43 kts,
22 Displacement: Dimensions: Guns: Tubes:

Machinery Complement:

A private venture by Boatservice Ltd., A/S., built in 1958 by Batservice Verft A/S. Subsequently taken over as an experimental boat by the Royal Norwegian Navy. Constructed of mahogany, with keel and frames of laminated ash and oak, Engines, spares and stores were supplied from Great Britain. Put on the reserve list in 1965.



NASTY

Bootservice Ltd. A/S

SNAR P 355 **SNÖGG** P 356

6 "Rapp" Class KJAPP P 354 KVIKK P 353 RAPP P 351 RASK P 352

72 tons standard Displacement:

87×23×5 feet 1—40 mm., 1—20 mm. AA. 4—21 inch Dimensions: Guns:

Tubes:

4 Packard petrol. 2 shafts. B.H.P.: 4,800=32 kts. Machinery: Complement:

Built by Båtservice Verft A/S. Of wooden construction, Rapp, the prototype, was laid down in Aug. 1951, launched on 7 May 1952 and completed on 18 Nov. 1952. Five of the same type were built in 1953-56. Pennant Nos. above.



RAPP

Royal Norwegian Navy, Official

Disposals

10 Elco Type: The four remaining boats were removed from the list in 1966, their six sister boats having been scrapped in 1960-62.

8 Fairmile Type: All scrapped in 1958-59. For full particulars of names, numbers and dates, see 1965-66 edition.

Most of the names of the Elco and Fairmile classes were taken by the new "Tjeld" class, see above.

GUNBOATS

"Storm" Class 20 New Construction ARG P 968 BLINK P 961 BRANN P 970 BRASK P 977 BROTT P 974 DJERV P 966 GLIMT P 962 GNIST F 979 HVASS P 972 KJEKK P 965 ODD P 975 PIL P 976 ROKK P 978 SKJOLD P 963 SKUDD P 967 STEIL P 969 STORM F 960 TRAUST P 973 TROSS P 971 TRYGG P 964

100 tons standard (125 tons full load)
118×19½×5 feet
1—3 inch; 1—40 mm.
Rocket throwers Displacement. Dimensions:

Guns: A/S weapons:

ROCKET Enrowers

2 Maybach diesels, B.H.P.: 7,200=over 30 kts.
15 (officially revised figure) Machinery: Complement:

General The first of the 20 (instead of the 23 originally planned) gunboats of a new The first of the 2U (instead of the 23 originally planned) gunboats of a new design to be built under the recently initiated five-year new construction programme was Storm, launched on 8 Feb. 1963, and completed on 31 May 1963, but this prototype was largely experimental and subject to design modifications. The first of the production boats was Blink, launched on 28 June 1965 and completed on 18 Dec. 1965, Formerly known as Motor Gunboats, but officially reclassified as Gunboats in 1965.



BLINK

1966, Royal Norwegian Navy, Official

DEPOT SHIPS

2 Ex-Canadian Frigate Type

VALKYRIEN (ex-Garm, ex-Toronto)

HORTEN (ex-Troll, ex-Prestonian) A 530 (ex-F 314)
Davie Shipbuilding Co.,
Lauzon, P.Q. Canada
22 June 1944
13 Sep. 1944 A 535 (ex-F 315) Davie Shipbuilding Co., Pennant No.: Builders: Launched:

Lauzon, P.Q. Canada 18 Sept. 1943 6 May 1944 10 Mar. 1956 Completed: Transferred: 10 Mar. 1956

1,570 tons standard (2,240 tons full load) $301\frac{1}{2}\times36\frac{1}{2}\times16$ feet Horten: 3—40 mm. Valkyrien: 1—4 inch, 2—40 mm. Triple expansion. 2 shafts. I.H.P.: 5,500=19 kts. Horten: 86. Valkyrien: 104 Displacement: Dimensions: Guns: Machinery:

Complement:

General

General Former Canadian modernised "River" class frigates loaned to Norway in Mar. 1956 and renamed, transferred outright early in 1959, and converted for use as depot ships and again renamed in 1965 and 1964, respectively, Horten for submarine support and Valkyrien parent ship for torpedo boats and gunboats.



HORTEN

1966, Royal Norwegian Navy, Official

Disposals of former Depot Ships

The former depot ship for motor torpedo boats, Valkyrien, ex-commercial regular coastal passenger, mail and freight carrier, was officially removed from the Navy List on 17 Dec. 1963.

The former depot ship and support tender for submarines, Sarpen, ex-German Königsau, was officially removed from the Navy List on 12 Dec. 1964.

Disposals of Auxiliaries

The sonar training ship Pingvin (ex-Draug, ex-German Pommern) was decommissioned on 21 Sep. 1963 and has been removed from the Navy List.

The former United States utility landing craft LCU 1478 has been removed from the Navy List, it was officially stated in 1964.

The battle damage repair ship of the converted American tank landing ship type, Ellida (ex-U.S.S. ARB 13, ex-U.S.S. LST 50), was returned to the U.S. Navy on 1 July 1960, and transferred to the Royal Hellenic Navy on 16 Sep. 1960 and renamed Sakipis.

FISHERY PROTECTION SHIPS

NORNEN

 $\begin{array}{lll} 930 & tons & gross \\ 201\frac{1}{2} \times 32\frac{1}{2} \times 15\frac{1}{4} & feet \\ 1 & 3 & inch & (76 & mm.) \\ 4 & diesels. & B.H.P.: & 3,500 = 17 & kts. \\ 32 & & & & & \\ \end{array}$ Measurement: Dimensions: Machinery:

Complement:

Built by Mjellem & Karlsen, Bergen, Norway. Launched and completed in 1963.

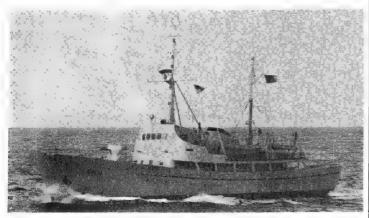
FARM HEIMDAL

Measurement: Dimensions: Guns:

Machinery:

Complement:

General Built by Ankerlókken Veft, Fiorō, Norway (Farm) and Bolsones Verft, Molde, Norway. (Heimdal) in 1962.



HEIMDAL

1966, Royal Norwegian Navy, Official

NORDKAPE **ANDENES**

Measurament Dimensions: Guns:

500 tons gross 186×31×16 feet 1—3 inch (76 mm.) M.A.N. diesel. B.H.P.: 2,300=16 kts Machinery:

Complement: General

All three built in the Netherlands in 1957 as whalers. Acquired by Norway in 1965 and converted into Fishery Protection Ships.

The old fishery protection vessels Nordkapp and Senja were stricken from the Navy List in 1956 and sold for use as fishing vessels.



ANDENES

1966, Royal Norweglan Navy, Official

WEATHER SHIPS

POLARFRONT I (ex-Saxifrage) POLARFRONT II (ex-Bryony) Name:

Charles Hill & Sons Ltd., Bristol 1 Feb. 1941 24 Oct. 1941 6 Feb. 1942 Harland & Wolff Ltd., Belfast 16 Nov. 1940 15 Mar. 1941 16 June 1942 Builders: Laid down: Launched: Completed:

1.060 tons standard (1,300 tons full load)
205 (o.a.)×33×14½ (max.) feet
Triple expansion. 1.H.P.: 2,750=16.5 kts.
2 S.E.
350 tons
7,000 miles at 10 kts. Displacement: Displacement:
Dimensions:
Machinery:
Boilers:
Oil fuel:
Radius:
Complement:

General Former British "Flower" class corvettes (later re-rated as frigates) transferred to Norway and employed as weather ships.



POLARFRONT II

K. Knudsen & Co., A/S Bergen, courtesy R.No.N.

OCEANOGRAPHIC RESEARCH SHIP

H. U. SVERDRUP

Displacement: 400 tons Measurement:

295 tons gross 127½ (o.a.), 111½ (pp.),×25×13 feet Wichmann diesel, B.H.P.: 600=11.5 kts. Dimensions: Machinery: Oil fuel: 65 tons 5,000 miles at 10 kts. cruising speed Radius:

Complement: 10 crew, 9 scientists

General

Oceanographic Research Ship built by Orens Mekaniske Verlisted, Trondheim. Laid down in Sep. 1959, launched in Feb. 1960 and completed on 15 June 1960. Financed by the U.S. Mutual Weapon Development Programme and transferred to and operated by the Norwegian Defence Research Establishment. Steel hull, welded construction, trawler bow, cruiser stern, controllable pitch propeller.



H. U. SVERDRUP

1964, Norwegian Defence Research Establishment

ROYAL YACHT

I Ex-British Escort Type

NORGE (ex-Philante)

Measurement: Dimensions: Machinery: 1,686 tons (Thames yacht measurement) $250\frac{1}{4}$ (pp.), 263 (o.a.)×28×15 $\frac{1}{4}$ feet 8-cyl. diesels. 2 shafts. B.H.P.: 3,000=17 kts.

SENIA

General
Built by Camper & Nicholson's Ltd., Gosport, England. Launched on 17 Feb. 1937.
Constructed to the order of the late Mr. T. O. M. Sopwith to act as escort and store vessel for the yachts Endeavour I and Endeavour II. Served in the British Navy as an anti-submarine escort vessel during the Second World War, after which she was purchased by the Norwegian people for King Haakon at a cost of nearly £250.000 and reconditioned as a Royal Yacht at Southampton. Can accommodate about 50 people in addition to the crew. Pennant No. A 533.



NORGE

1965, Royal Norwegian Navy, Official,

ICEBREAKER

I Projected

General

A new naval icebreaker is planned under the new construction programme, but she is not being proceeded with for the time being.

PANAMA

Base

Under the 1955 Treaty the United States occupied the Rio Hato base.

Mercantile Marine

Lloyd's Register of Shipping: 692 ships of 4,465,407 tons gross

COAST GUARD PATROL VESSELS

2 U.S. Small C.G. Utility Type

Displacement: Dimensions: Guns: Machinery:

35 tons 69×14×5 feet 1 M.G. H.P.: 400=13 kts.

Complement:

General eneral Two small craft purchased from the United States Government in 1947. Two coast guard utility boats were transferred to Panama by the U.S.A. at the S. Naval Station, Rodman, Canal Zone, in June 1962.

Auxiliarities

There is a Navy fire-fighting tug. One or two U.S. service boats are also reported.

PAKISTAN

Administration

Commander-in-Chief, Pakistan Navy, and Chief of the Naval Staff: Vice-Admiral Afzal Rehman Khan, H.Pk., H.J., H.Q.A. Deputy Chief of Naval Staff (Operations):

Commodore S. A. Rauf, S.K., P.N.
Commodore Commanding P. N. Flotilla:
Commodore Muzaffar Hasan, S.K., P.N.

Naval Adviser to Pakistan High Commission, London: Commodore H. M. Hussain, P.N.

Naval Attaché in Washington: Captain Anwar Saeed, P.N.

Personnel

1963: 7,700 (700 officers; 7,000 ratings) 1964: 8,250 (750 officers, 7,500 ratings) 1965: 8,350 (790 officers, 7,560 ratings) 1966: 8,680 (820 officers, 7,860 ratings)

Mercantile Marine

Lloyd's Register of Shipping: 153 vessels of 399,703 tons gross



Scale: 150 ft.=1 inch.

BABUR



BADR, KHAIBAR



ALAMGIR, JAHANGIR



SHAH JAHAN



TIPPU SULTAN, TUGHRIL



ZULFIOUAR

SUBMARINE

GHAZI (ex-U.S.S. Diablo, SS 479)

Pennant No. S 130

Builders Portsmouth Nava! Shipyard

Launched 30 Nov. 1944 Completed Mar. 1945

I "Tench" Class

Displacement:

1,570 tons standard. 1,846 tons surface (2,410 tons submerged) revised Pakistan Navy figures 311½ (o.a.)×27½×16½ feet revised Pakistan Navy figures 10—21 inch (6 bow, 4 stern) 4 diesels. B.H.P.: 6,500=20 kts.

Dimensions: Machinery:

(surface)

Oil fuel: Radius:

(surface)
4 electric motors, S.H.P.: 4,610
=10 kts, (submerged)
300 tons
14,000 miles at 10 kts.
89 (revised official figure)

Complement:

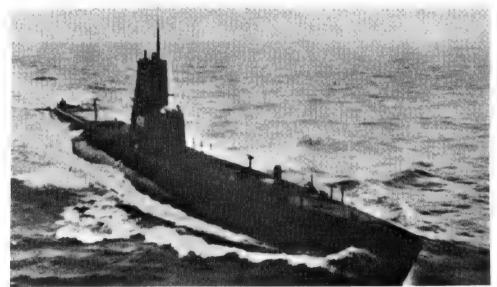
General
Former U.S. submarine of the "Tench" class. AGSS, ex-SS, on loan from the U.S. Navy to the Pakistan Navy since 1 june 1964 under the Mutual Defence Programme. Conversion

She was given an extensive overhaul and refit at the Philadelphia Naval Shipyard, converting her into a Fleet Snorkel Type.

Commissioning

Commissioned as P.N.S. Ghazi at the U.S.N. Sub-marine Base, New London, Connecticut on 1 June 1964. Nomenclature

Nomenclature
The name Ghazi means Defender of the Faith.
Transfer
The transfer, originally negotiated in 1963, was ceremonially made on 1 June 1964.



GHAZI

1966, Pakistan Navy, Official

CRUISER (Cadet Training Ship)

Builders and Engineers & W. Hawthorn Leslie & Co. Ltd, Hebburn-on-Tyne

I Improved "Dido" Class

BABUR (ex-H.M.S. Diadem)

5,900 tons standard (7,560 tons

Pennant No. 84

Dimensions:

5.790 tons standard (7,580 tons full load)
Length: 512 feet (o.a.) Beam: 52 feet. Draught: 15 feet (mean). 18½ (meax.) feet 8—5:25 inch AA., 14—40 mm.

Tubes:

Armour: Machinery:

8—5:25 inch AA., 14—40 mm.
AA., 4—3 pdr.
6—21 inch (tripled)
2 inch side, 2 inch turrets
Parsons single reduction geared
turbines. 4 shafts. S.H.P.:
62,000=32 kts.
4 Admiralty 3-drum type
588 (peace)

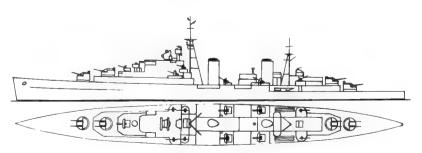
Complement:

General

General Former British anti-aircraft light cruiser built under the Second World War estimates. Sold to Pakistan on 29 Feb. 1956 (announced by Admiralty). Refitted at H.M. Dockyard, Portsmouth in 1957, with new radar and revised secondary armament. Officially turned over from the Royal Navy to the Pakistan Navy and renamed Babur at Portsmouth on 5 July, 1957.

Laid down 15 Nov. 1939

Lounched 26 Aug. 1942 Completed 6 Jan. 1944



Nomenclature
Renamed after Babur, the founder of the great Mogul
Empire. (Diadem means the emblem of sovereignty.)
The prefix C was dropped from the pennant number
in 1963.

Converted into a training ship for cadets in 1961. Port elevation and plan. Redrawn in 1966. Scale: 128 feet=1 inch.

Light Cruiser-contd.



BABUR

1966, Pakistan Navy, Official

ennant No BADR (ex-H.M.S. Gabbard) 161 (ex-D 47) KHAIBAR (ex-H.M.S. Cadiz) 163 (ex-D 79)

2 "Battle" Class

Displacement: Dimensions:

Guns: Tubes: A/S weapons: Machinery:

"Battle" Class
2,325 tons standard (3,361 tons full load)
355 (pp.), 379 (o.a.)×40½×12½ (mean), 17 (max.) feet
4—4-5 inch, 10—40 mm. AA.
8—21 inch (quadrupled)
Squid three-barrelled depth charge mortar
Parsons geared turbines, 2 shafts.
S.H.P.: 50,000=35.75 kts. (designed) 31 kts. sea speed
2 Admiralty 3-drum type
680 tons
3,000 miles at 20 kts. Boilers: Oil fuel Radius: Complement:

General

The sale of these two destroyers to Pakistan was announced by the Royal Navy on 29 Feb. 1956. Refitted and modernised in Great Britain with funds made available by the United States under the Mutual Defence Assistance Programme.

Transfers

Bodr was refitted at Palmers Hebburn, Yarrow, handed over to the Pakistan Navy on 24 Jan. 1957 and sailed from Portsmouth for Karachi on 17 Feb. 1957.

Khalbar was refitted at Alex, Stephen & Son Ltd.,

Govan, Glasgow, and handed over to the Pakistan Navy on 1 Feb. 1957.

DESTROYERS

Builders Laid down 2 Feb. 1944 Launched Completed 10 Dec. 1946 Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne 16 Mar. 1945 Fairfield Shipbuilding & Engineering Co. Ltd., Govan, Glasgow. 10 May 1943 16 Sep. 1944



BADR

1966. Pakistan Navy, Official

Pennant Nos Pennant Nos. were changed from D 47 and D 79 to 161 and 163, respectively, in 1963. Nomenclature Kaibar was named in commemoration of a famous battle in the history of Islam which Prophet Mohammed won in Arabia over 1,350 years ago.



KHAIBAR

1964, Pakistan Navy, Official

SHAH IAHAN (ex-H.M.S. Charity)

I "Ch" Class

Displacement: Dimensions:

1,710 tons standard (2,545 tons full load)
362\{\cdot\}35\{\cdot\}10 \ (mean), 16
(max.) feet
3-4.5 inch. 6-40 mm. AA.
4-21 inch (quadrupled)
2. Squid triple, barralled | depth Guns: Tubes: A/S weapons: –21 inch (quadrupled) Squid triple-barrelled depth

2 Squid triple-barrelled depth charge mortars Parsons geared turbines, 2 shafts, S.H.P.: 40,000=36.75 kts. (de-signed), 31.25 kts. (sea speed) 2 Admiralty 3-drum type 200 Machinery: Boilers:

Complement:

General

General
Purchased from Great Britain by the U.S.A. and, under the Mutual Defence Assistance Programme handed over to the Pakistan Navy on 16 Dec. 1958 at the shippard of J. Samuel White & Co. Ltd., Cowes, Isle of Wight who refitted her, and renamed Shah Jahan ("Emperor of the World") after the Fifth Emperor of the Mughal Dynasty who was the ruler at the height of the prosperity of the Mughal Empire.

Pennant No. 164 (ex-D 29)

Builders John I. Thornycroft & Co. Ltd., Woolston, Southampton Laid down

Launched 30 Nov. 1944

Completed 19 Nov. 1945



SHAH JAHAN

1963, Pakistan Navy, Official

Pennant No.

Disposal ennant No.

Pennant number changed from D 29 to 164 in 1963.

Sister ship Talmur (ex-H.M.S. Chivalrous) was returned to the Royal Navy and scrapped in 1960-61. ALAMGIR (ex-H.M.S. Creole)

JAHANGIR (ex-H.M.S. Crispin, ex-Craccher)

2 "Cr" Class

Displacement:

1.730 tons standard (2.560 tons full load)
362\\35\\210 (mean), 16
(max.) feet
3-4-5 inch, 6-40 mm, AA.
4-21 inch (quadrupled)
2 Squid triple-barrelled depth charge mortars
Parsons geared turbines: 2 shafts.
S.H.P.: 40,000=36-75 kts. (designed), 31-25 kts. (sea speed)
2 Admiralty 3-drum type
580 tons
2.800 tons at 20 kts. Dimensions: Tubes: A/S weapons:

Machinery:

Boilers: Oil fuel Radius: Complement:

General

The sale of these two destroyers to Pakistan was announced by the Royal Navy on 29 Feb. 1956. They were refitted and modernised in Great Britain by John I. Thornycroft & Co. Ltd., Woolston, Southampton, in 1957-58 with funds made available by the United States under the Mutual Defence Assistance Programme. Gunnery

Gunnery
They formerly had a W/T cabin in place of "B" gun and a gun in "X" position but during the refit before joining the Pakistan Navy the 4.5 inch gun was restored to "B" position, the 4.5 inch gun in "X" position was suppressed, and two Squids substituted.

Pennant Nos.
Pennant Nos were changed from D 82 and D 168 to 160 and 162, respectively, in 1963.

Transfers

Transfers

Transfers
Crispin was turned over to the Pakistan Navy at
Southampton on 18 March 1958 and renamed Jahangir.
Creole was turned over at Southampton in 1958 and
renamed Alamgir.

Destroyers—contd.

Builders
J. Samuel White &
Co. Ltd., Cowes
J. Samuel White &
Co. Ltd., Cowes Pennant No. 160 (ex-D 82) 162 (ex-D 168)

Laid down 3 Aug. 1944 1 Feb. 1944

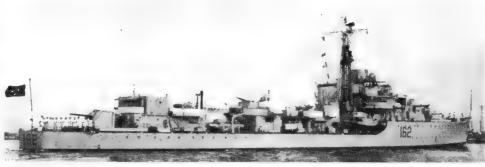
Launched 22 Nov. 1945 23 June 1945

Completed 14 Oct. 1946 10 July 1946



ALAMGIR

1965, Pakistan Navy, Official



JAHANGIR

1965, Pakistan Navy, Official

FAST ANTI-SUBMARINE FRIGATES

TIPPU SULTAN (ex-H.M.S. Onslow, ex-Pakenham)

TUGHRIL (ex-H.M.S. Onslaught, ex-Pathfinder)

2 "O" Class Limited Conversion Type 16

Displacement: Dimensions:

1,800 tons standard (2,300 tons 1.800 tons standard (2,300 tons full load)
338 (pp.), 345 (o.a.)×35×9 (mean), 15 (max.) feet
2—4 inch. 5—40 mm. AA,
4—21 inch.
2 Squid triple-barrelled depth

Guns: Tubes: A/S weapons:

Squid triple-barrelled depth Parsons geared turbines. 2 shafts.
S.H.P.: 40,000=34 kts.
2 Admiralty 3-drum type

Machinery:

Boilers: 170

Complement: General

General
Originally three "O" class destroyers were acquired from Great Britain, Tippu Sultan being handed over on 30 Sep. 1949; Tariq on 3 Nov. 1949; and Tughril on 6 Mar. 1951.

6 Mar. 1951.

An agreement was signed in London between Great Britain and U.S.A. for refit and conversion in the United Kingdom of Tippu Sultan and Tughril (announced 29 Apr. 1957) with funds provided under the Mutual Security Act of the U.S.A. Pennant Nos. were changed from D 49 and D 204 to F 249 and F204 respectively, in 1959, and to 260 and 261 in 1963.

All three ships were scheduled for conversion into

(Ex-Destroyers)

Pennant No. 260 (ex-F 249) Builders John Brown & Co. Ltd., Clydebank Fairfield S.B. & Eng. Co. Ltd., Glasgow 261 (ex-F 204)

Laid down 1 July 1940 14 Jan. 1941

Launched 31 Mar. 1941

Completed 8 Oct. 1941

9 Oct. 1941 19 June 1942



TIPPU SULTAN

fast anti-submarine frigates, Tippu Sultan and Tughril were converted at Liverpool by Grayson Rolls & Clover Docks Ltd., Birkenhead, and C. & H. Crighton Ltd.,

1963, Pakistan Navy, Official respectively, Tariq was not converted. She was handed back to Great Britain at Portsmouth on 10 July 1959

SURVEYING VESSEL

Pennant No. 262 (ex-F 265)

Builders Smith's Dock Co. Ltd., South Bank-on-Tees

Laid down 16 Apr. 1942

for disposal.

Launched 12 Oct. 1942 Completed Mar. 1943



ZULFIQUAR

1963, Pakistan Navy, Official

ZULFIQUAR (ex-Dhanush, ex-Deveron)

I "River" Class (Modified Frigate)

Displacement: 1,370 tons standard (2,100 tons

full load)

301½ (o.a.)×36½×12 feet

1—4 inch, 2—40 mm. AA.

Triple expansion, 1.H.P.: 5,500 Dimensions: Guns: Machinery: =20 kts

2 Admiralty 3-drum type 400 tons 3,000 miles at 12 kts. 150 Boilers: Oil fuel: Radius:

Complement:

General
Former British "River" class frigate, converted into
a survey ship, with additional charthouse aft. She has
strengthened davits and carries survey motor boats. The
after 4-inch gun was removed.

Pennant Nos The pennant number was changed from F 265 to 262 in 1963.

Sister ship Shamsher (ex-Nadder) (training ship) of the "River" class was disposed of in 1960.

COASTAL MINESWEEPERS

8 MSC Type

MAHMOOD (ex-MSC 267) MOSHAL (ex-MSC 294) MUJAHID (ex-MSC 261) MUBARAK (ex-MSC 262) MUKHTAR (ex-MSC 274) MUHAFIZ (ex-AMS 138) MUNSIF (ex-MSC 273)

Displacement: Dimensions: Guns:

335 tons light (375 tons full load) 138 (pp.), 144 (o.a.) \times 27 \times 8½ feet 2—20 mm. G.M. diesels. 2 shafts B.H.P.: 880=14 kts

Machinery:

Complement:

General Transferred to Pakistan by the U.S. under MAP. Mukthtar and Munsif on 25 June 1959, Muhafiz on 25 Feb. 1955, Mujahid in Nov. 1956, Mahmood, M 160, in May 1957, Mubarak in 1957, Momin in Aug. 1962 and Moshal M 167, on 13 July 1963. A photograph of Momin appears in the 1964-65 edition.



MAHMOOD

1963, Pakistan Navy, Official

PATROL CRAFT

4 "Town" Class

COMILLA P 142

JESSORE P 141

RAJSHAHI P 140

SYLHET P 143

Displacement: Dimensions: Machinery:

115 tons standard (143 tons full load)
100 (w.f.), 107 (o.a.)×20×5 feet
2—40 mm., 70 cal. Bofors AA.
2 Maybach/ Mercedes MD 655/18 diesel engines. B,H.P.:
3.400 (tropical)=24 kts.

Complement:

General

These fast patrol craft, named after towns in East Pakistan, were built by Brooke Marine Limited, Lowestoft, England, to the order of the Pakistan Government. The contract was placed on 5th Oct, 1963, Jessore and Comilla were commissioned on 20th May, 1965 and Rajhahi and Sylhet entered the service of the Pakistan Navy by Aug. 1965. The hulls are of special design longitudinally and transversely strengthened. All-welded steel construction with superstructures of all welded sea



JESSORE

1965, Pakistan Navy, Official

SEAWARD DEFENCE MOTOR LAUNCHES

2 SDML Type

SDML 3517 (ex-SDML 1261)

SDML 3520 (ex-SDML 1266)

Displacement: Dimensions:
Guns:
Machinery:
Complement:

46 tons standard (54 tons full load) 72 (o.d.)> 15;×5; feet 1—3 pdr., 1—20 mm, AA, Diesel, 2 shafts, B.H.P.: 320-12 kts.

General
Former British Harbour Defence Motor Launches of wooden construction, built under the emergency programme during the Second World War, and re-designated Seaward Defence Motor Launches after the war, SDML 3518 and SDML 3519 were scrapped in 1965. A photograph of SDML 3517 appears in the 1963-64 and 1964-65 editions.



SDML 3520

1965, Pakistan Navy, Official

OILERS

DACCA (ex-U.S.N.S. Mission Santa Clara, AO 132)

5.730 tons light (22.380 tons full load)
503 (w.l.), 523 (o.a.)×68×30% (max.) feet
Turbo-electric. S.H.P.: 6,000 - 15 kts.
2 Babcock & Wilcox
2.0,000 tons (official figure), 134,000 barrel capacity
160 (15 officers and 145 men) Displacement: Dimensions Machinery:

Boilers: Oil capacity: Complement:

General
Former U.S. fleet tanker of the "T2-SE-A1" Type ("Mission" Class). Transferred
on loan to Pakistan under the Mutual Defence Assistance Programme.. Handed over
from the U.S. to the Pakistan Navy on 17 Jan. 1963. Pennant No. A 41.



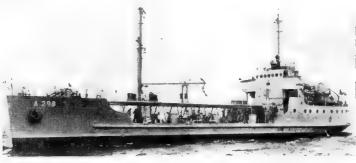
DACCA

1964, Pakistan Navy, Official

ATTOCK

600 tons standard (1,255 tons full load) 177 \downarrow (o.a.) \cdot 32 \times 15 (max.) feet Direct coupled diesel. Speed 8.5 kts. 26 Displacement: Dimensions: Machinery: Complement:

General A harbour oiler of 6,500 barrels capacity built in Trieste, Italy, in 1960 for the Pakistan Navy, under the Mutual Defence Assistance Programme of U.S.A.



ATTOCK

1963, Giorgio Arra

WATER CARRIER

ZUM ZUM YW 15

Built in Italy under U.S. off-shore procurement of the MDA Programme,

TUGS

MADADGAR (ex-U.S.S. Yuma, ATF 94)

Displacement: Dimensions: Machinery: 1,235 tons standard (1,675 tons full load) 195 (w.l.), 205 (a.a.) \times 38 $\frac{1}{2}\times$ 15 $\frac{1}{2}$ (max.) feet 4 sets G. M. diesels with electric drive, 1 shaft. B.H.P.: 3,000=16·5 kts.

Complement: General

Ocean-going salvage tug. Built by Commercial Iron Works, Portland, Oregon. Laid down on 13 Feb. 1943. Launched on 17 July 1943. Completed on 31 Aug. 1943. Transferred from the U.S. Navy to the Pakistan Navy on 25 Mar. 1959 under MDAP. Fitted with powerful pumps and other salvage equipment.



MADADGAR

1965, Pakistan Navy, Official

RUSTOM

 $105\times30\times11$ feet Crossley diesel. B.H.P.: 1,000=9.5 kts. (max.) 1,500 miles endurance Dimensions: Machinery: Radius: Complement:

General General
General purpose tug for the Pakistan Navy originally ordered from Werf-Zeeland at Hansweert, Netherlands, in Aug. 1952, but after the liquidation of this yard the order was transferred to Worst & Dutmer at Meppel, Launched on 29 Nov. 1955, A photograph appears in the 1964-65 edition.

BHOLU

GAMA

General
These are small harbour tugs built under an "off-shore" order by Costaguta-Voltz.

PERU

Administration

Minister of Marine:

Rear Admiral Luis Ponce A. of Naval Operations: Vice-Admiral Julio Giannotti L. Chief of Naval Staff:

Rear Admiral Raul Delgado E.

Commander-in-Chief of the Fleet: Rear Admiral Jorge Barreto A. Naval Attaché in London:

Rear Admiral Enrique Carbonel C. Naval Attaché in Washington:

Rear Admiral Raul Rios P. de Z.

Personnel

1966: 7,150 (650 officers, 6,500 men)

Mercantile Marine

Lloyd's Register of Shipping: 78 vessels of 163,224 tons gross

4 "Abato" Class (U.S. Built)

825 tons standard, 1,400 tons submerged 243 (o.a.)×22×14 feet 1—5 inch, 25 cal. (Abtao and 2 de Mayo) 4—21 inch (bow), 2—21 inch (stern) Displacement:

Dimensions: Guns:

Torpedo tubes: (stern)

Machinery:

(stern)
2 G.M. single acting, two-cycle, non-reversible, type 278A diesels. 2 shafts, B.H.P.: 2,400=16 kts. surface Electric motors=10 kts. submerged)
45 tons
5 000 miles at 10 kts.

Oil fuel:

Radius: Complement: 5,000 miles at 10 kts. 40

General All built by the Electric Boat Division of the Geneal Dynamics Corporation, Groton, Connecticut. They are of modified U.S. "Mackerel" class.

Nomenclature

Nomenclature
Lobo means wolf, Tiburon means shark. The names of
all Peruvian submarines were changed in Apr. 1957 by
a supreme decree of the President of the Republic of
Peru. The names mow used are in honour of famous Pe-

Peru. The names now used are in nonour of famous reruvian naval battles

Pennant Numbers

Pennant Numbers

Pennant Numbers were changed from 5, 7, 6 and 8

to SS 2, SS 3, SS 1 and SS 4, respectively, in 1959, and
were again changed to 42, 43, 41 and 44, respectively,
in 1960.

Photographs

A photograph of all four submarines of this class

A photograph of all four submarines of this class together appears in the 1959-60 editions, of 2 de Mayo in the 1960-61 to 1965-66 editions and of lquique in the 1964-65 and 1965-66 editions. Disposals

The four old submarines of the "R" class, Arica (ex-R 4), Casma, (ex-R 2), Islay (ex-R 1) and Pacocha ex-R 3) were scrapped in 1960.

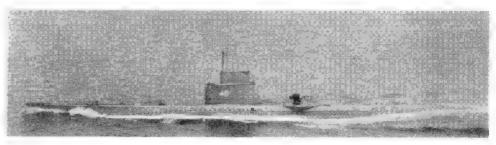
SUBMARINES

	No.	Laid down	Launched	Completed
ABTAO (ex-Tiburon)	42	12 May 1952	27 Oct. 1953	20 Feb. 1954
ANGAMOS (ex-Atun)	43	27 Oct. 1955	5 Feb. 1957	1 July 1957
DOS DE MAYO (ex-Labo)	41	12 May 1952	6 Feb. 1954	14 June 1954
IQUIQUE (ex-Merlin)	44	27 Oct. 1955	5 Feb. 1957	I Oct. 1957



ANGAMOS

1966, Peruvian Navy, Official



ABTAO

1966, Peruvian Navy, Official

ALMIRANTE GRAU (ex-H.M.S. Newfoundland)

CORONEL BOLOGNESI (ex-H.M.S. Ceylon)

2 "Almirante Grau" Class

Displacement:

Coronel Bolognesi: 8,781 tons standard (11,110 tons full load) Almirante Grau: 8,800 tons standard (11,090 tons full load) Length: 549 (w.l.), 555½ (o.a.) feet. Beam: 62 feet Draught: 16½ (mean), 20½ (max.) feet 9-6 inch, 8-4 inch AA., 12—40 mm. AA. (Coronel Bolognesi 18—40 mm.)

Guns:

Removed 4" side, 4" C.T., 2" turrets 2" Tubes: Armour,

deck

deck
Parsons single-reduction geared
turbines 4 shafts. S.H.P.: 72,500
=31.5 kts.
4 Admiralty 3-drum type
1,620 tons
6,000 miles at 13 kts.
Coronel Bolognesi, 766, Almirante Grau, 808 Machinery:

Boilers:

Oil fuel:

Radius: Complement:

Dimensions:

General
Former British cruisers of the "Ceylon" class. The designed displacement was 8,000 tons. These ships were a modification of the original "Colony" class design, one 6-inch turret having been suppressed, and the number of light AA, guns augmented. Reconstruction

Almironte Grau was reconstructed in 1951-53 at H.M. Dockyard, Devonport, with two lattice masts, new bridge and improved AA. armament: her torpedo tubes

being removed,

Coronel Bolognesi was refited with lattice foremast and covered modified bridge in 1955-56, and her tor-

pedo tubes were removed.

Gunnery

The 4 inch guns of Coronel Bolognesi are radarcontrolled.

Torpedo Tubes

Thes ships originally mounted 6-21 inch torpedo tubes.

Photographs

A port bow view of Coronel Bolognesi appears in the 1960-61 and 1961-62 editions.

CRUISERS

Pennant No. 81

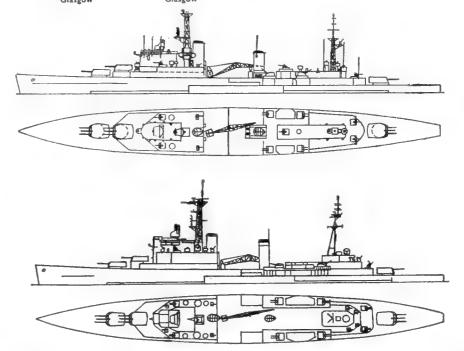
82

Builders
Swan, Hunter &
Wigham Richardson,
Ltd., Wallsend-onTyne
Alexandre Alexander Stephen & Sons, Glasgow Sons, Ltd., Govan,

Engineers
The Wallsend Slipway
& Engineering Co.
Ltd., Wallsend-on-Ltd., Wallsend-on-Tyne Alexander Stephen & Sons, Ltd., Glasgow Govan.

Completed Launched Completed 19 Dec. 1941 13 July 1943 Laid Down Nov. 1939

27 Apr. 1939 30 July 1942 31 Dec. 1942



Abbearance

Appearance
Almirante Grau has new H.A. director mounted on either side of bridge, Coronel Bolognesi was refitted with a lattice foremast and a tripod mainmast, whereas Almirante Grau was reconstructed with two lattice Almirante masts.

Transfer Almirante Grau (incorporated in the Peruvian Navy on 19 Dec. 1959) was formally transferred from the British Navy at Portsmouth on 30 Dec. 1959 and Coronel Bolognesi was transferred from the British Navy at Portsmouth on 9 Feb. 1960.

Upper Drawing
Port elevation and plan of Almirante Grau. Scale: 128 feet=1 inch,

Lower Drawing

Port elevation and plan of Coronel Bolognesi, Scale:
128 feet=1 inch.

Cruisers-contd.



CORONEL BOLOGNESI

1966, Peruvian Navy, Official



ALMIRANTE GRAU

1964, Peruvian Navy, Official

DESTROYERS

GUISE (ex-U.S.S. Isherwood, DD 520)

VILLAR (ex-U.S.S. Benham, DD 796)

2 "Villar" Class

Ex-U.S. "Fletcher" Class

Displacement:

Dimensions: Guns:

Tubes: A/S weapons: Machinery:

2,100 tons standard (3,150 tons full load)
376 \(\frac{1}{2}\) (0.a,)\(\times 3\) \(\frac{1}{2}\) (mean),
18 \((max.)\) feet
4—5 inch, 38 cal. d.p.; 6—3 inch 50 cal. AA. (3 twin)
5—21 inch (quintupled)
2 fixed Hedgehogs, 1 D.C. rack,
2 side-launching torpedo racks
2 General Electric geared turbines 2 shafts. S.H.P.: 60,000=
35 kts.
4 Baboock & Wilcox

Boilers: Oil fuel; Radius: Complement:

35 kts. 4 Babcock & Wilcox 650 tons 6,000 miles at 15 kts. 300 (peace), 350 (war)

Former United States destroyers of the Later "Fletcher" class (Villar) and "Fletcher" class (Guise).

Transfer
Transferred from the United States Navy to the Peruvian Navy at Boston. Massachusetts, on 15 Dec. 1960, and at San Diego, California, on 8 Oct. 1961, respectively

Acquisition Programme
Two more destroyers of the "Fletcher" type are to be transferred from the U.S.A.

Pennant No. 71

Builders
Bethlehem Steel
Co., Staten Island
Bethlehem Steel
Co., Staten Island

Launched 24 Nov. 1942 29 Aug. 1943

Completed 10 Apr. 1943 20 Dec. 1943



GUISE

1964, Peruvian Navy, Official



VILLAR

1961, Peruvian Navy, Official

DESTROYER ESCORTS

3 "Castilla" Class

Ex-U.S. "Bostwick" Class

AGUIRRE (ex-U.S.S. Waterman, DE 740) CASTILLA (ex-U.S.S. Bangust, DE 739) RODRIGUEZ (ex-U.S.S. Weaver, DE 741)

4 July 6 June 31 Dec. 30 Oct. 6 June 20 June 30 Nov.

Launched

Combleted



Pennant No.

CASTILLA

1964, Peruvian Navy, Official

Displacement:

Dimensions:

1,240 tons standard (1,700 tons full load)
300 (pp.), 306 (o.a.)×368×
12 (max.) feet
3—3 inch, 50 cal., d.p., 6—40
mm. AA. (three twin), 10—20
mm. AA. Guns:

Tubes:

nim. AA.
Removed (see Torpedo notes)
1 Mark 10 ahead throwing weapon; 8 K guns; 2 depth charge
racks aft A/S weapons:

Machinery:

racks art
4 diesel-electric sets coupled to
2 shafts. B.H.P.: 6,000=20 kts.
322 tons
10,500 miles at 12 kts.

1,240 tons standard (1,900 tons

Oil fuel: Radius: Complement:

General

General
Former United States destroyer escorts DE, of the
"Bostwick" class. All built by the Western Pipe &
Steel Co., San Pedro, California, in 1943. Transferred
to Peru on 26 Oct. 1951, under the Mutal Defence
Assistance Programme. Reconditioned and modernised
at Green Cove Springs and Jacksonville, Flor. Actually
arrived in Peru on 24 May 1952

Pennant Numbers
Given "DE" instead of "D" pennant numbers in 1959. Pennant numbers were changed from 2, 1 and 3 to 62, 61 and 63, respectively, in 1960.

Torpedo Tubes
The original three 21 inch torpedo tubes in a triple mounting were removed.

Photograph

A staboard quarter oblique aerial view of Castilla appears in the 1953-54, to 1959-60 editions, a port broadside surface view of Radriguez in the 1960-61 to 1963-64 editions, and a port bow surface view of Aguirre in the 1960-61 to 1965-66 editions.

Disposals

Disposals

The two frigates of the "Palacios" Class, Ferré
(ex-H.M.C.S. Poundmaker) and Palacios (ex-H.M.C.S.
St. Pierre), former frigates of the Canadian "River"
class, were officially stricken from the Navy List in

The frigate Galvez (ex-U.S.S. Woonsocket, PF 32), former patrol frigate of the United States "Tacoma" class, was scrapped in 1961.

DIEZ CANESCO (ex-U.S.S. Shoveler, MSF 382)

GALVEZ (ex-U.S.S. Ruddy, MSF 380)



(Corvettes)

RODRIGUEZ

Added 1966, Peruvian Navy, Official

PATROL VESSELS

Pennant No. 69 68

Laid down 1 Apr. 1944 24 Feb. 1944 Launched 10 Dec. 1944 29 Oct. 1944

Completed 28 June 1945 28 Apr. 1945

2 "Galvez" Class. Ex-U.S. MSF Type

Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Complement:

890 tons standard (1,250 tons full load) 215 (w.l.), $221\frac{1}{5}$ (o.a.) $\times 32\frac{1}{5} \times 10\frac{1}{5}$ feet 1—3 inch, 50 cal. d.p., 2—40 mm. AA 1 hedgehog Diesel electric. 2 shafts. B.H.P.: 3,532=18 kts.

General
Former U.S "Auk" class fleet minesweepers, MSF (ex-ocean minesweepers, AM), of the large steel hulled type, Both built by Gulf Shipbuilding Corp. Activated at San Diego, California, and transferred to the Peruvian Navy under the Mutual Defence Assistance Programme on 1 Nov. 1960. Minesweeping gear was removed and sonar equipment fitted so that they could be used as patrol vessels. The 3 inch gun director was also removed. A photograph of Diez Canesco appears in the 1961-62 to 1964-65 editions.



GALVEZ

1965. Peruvian Navy, Official

UCAYALI

COASTAL PATROL BOATS

6 Vosper Type

DE LOS HEROS 23

Displacement: Dimensions:

Machinery:

LARREA 25 SANCHEZ CARRION 26

100 tons $103\frac{3}{2}$ (w.l.), $109\frac{3}{2}$ (o.a.) $\times 21 \times 5\frac{3}{2}$ feet 2—20 mm. AA. 2 Napier Deltic 18cyl. turbocharged diesels B.H.P.: 6,200=30 kts. 25 (4 officers and 21 ratings)

Complement: General

General Ordered in 1963. Designed and built by Vosper Ltd., Portsmouth, England, for the Peruvian Navy. Of all-welded steel construction with aluminium upperworks. Designed for coastal patrol, air-sea rescue, and fishery protection. Equipped with Vosper roll damping fins, Decca Type 707 true motion radar, comprehensive radio, up-to-date navigation aids, and air-conditioning. The first boat, Velarde, was launched on 10 July 1964, the last, Sanchez Carrion, on 18 Feb. 1965. Can be armed as gunboat, torpedo boat (provision was made to ship four side-launched torpedoes) or minelayer. As an alternative to the gun armament a twin rocket projector can be fitted forward. Fitted with sonar equipment and depth charges in racks aft.



VELARDE

BONDY (ex-YMS 25)

1966, Vosper Ltd., Portsmouth, England, Builders

COASTAL MINESWEEPERS

2 "Bondy" Class

SAN MARTIN (ex-YMS 35)

Displacement: Dimensions:

Guns: Machinery: Oil fuel: Radius: Complement: 300 tons standard (325 tons full load 136×24½×6 feet 1—3 inch, 2—20 mm. AA. 2 G.M. diesels. B.H.P.: 1,000=13 kts. (11 kts. econ.)

1,600 miles at 8 kts.

General General
Former U.S. motor minesweepers of the YMS type. Of wooden construction, Bondy was built by Greenport Basin & Construction Co., Long Island, N.Y., and launched on 28 Jan. 1943, San Martin was built by C. Hiltebrandt Drydock Co., Kingston, N.Y., and acquired from the U.S.A. in 1947.
Formerly known as Alferez de Fragata Bondy and Guardiamarina San Martin. Pennant Nos. were changed from 27 and 29 to 137 and 06 respectively, in 1964.

A photograph of San Martin appears in the 1958-59 to 1965-66 editions.



BONDY

1966, Peruvian Navy, Official

RIO ZARUMILLA 01

MOTOR LAUNCHES

3 "Rio" Class RIO TUMBES 02

RIO PIURA 04

Displacement:

37 tons full load

57 tolls 12h 1000 651×17×3½ feet 2—40 mm. 2 G. M. diesels, 2 shafts, B.H.P.: 1,200=18 kts. 1,000 miles at 14 kts.

Machinery: Radius:

Built by Korody Corp., Navaltecnica Internazionale S.p.A., Cantieri Navali Fratelli Benetti, Viaregio, Italy. KPL 181 type. Ordered in 1959, laid down on 15 July 1959, delivered in May 1960, and entered service on 5 Sep. 1960.

A fourth boat of this class. Rio el Sulto, 03, was officially deleted from the list in 1966. There are also the ex-U.S. small patrol craft YP 99, YP 242 and YP 243.



RIO TUMBES

1961, Peruvian Navy, Official

RIVER GUNBOATS

2 "Marañón" Class

MARAÑÓN

Displacement:

365 tons full load 154½ (w.l.) \times 32 \times 4 (max.) feet 2.—3 inch, 50 cal., d.p., 7.—20 mm. AA. (2 twin, 3 inch) Dimensions: Guns:

2—3 inch, 50 cal., d.p., 7—20 mm. AA. (2 twin, 3 single)
Two sets British Polar Diesel engines. Type M441.
B.H.P.: 800— 12 kts. (normal)
6,000 miles without refuelling Machinery:

Range: Complement:

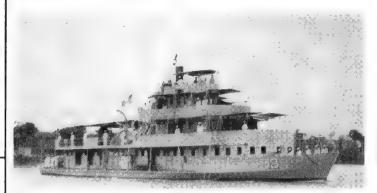
General

SANTILLANA 22 VELARDE 21

General
Ordered early in 1950. Employed on police duties in Upper Amazon. Specially
designed for carrying naval officers and men under tropical conditions. Very shallow
draught. Superstructure of aluminium alloy. Mechanical ventilation. Based on Iquitos.

Builders

John I Thornycroft & Co. Ltd., Apr: 1951 Woolston, Southampton 7 Mar. 1951 Marañón Ucayali



MARAÑÓN

1962, Peruvian Navy, Official

LORETO

2 "Loreto" Class

AMAZONAS

250 tons standard 145×22×4 feet 2—3 inch, 1—45 mm,, 2—2 Diesel. B.H.P.: 750=15 kts. 35 Displacement: Dimensions: Guns: Machinery: Complement: -20 mm. AA.

Designed and built by the Electric Boat Co., Groton, Conn. Launched in 1934. A photograph of Loreto appears in the 1958-59 edition. Pennant Nos. 11 and 12, respectively.



AMAZONAS

Peruvian Navy, Official

NAPO

Displacement: Dimensions: Guns: Machinery:

98 tons 100 (pp.), 101½ (o.a.)×18×3 feet 3-47 mm. (3 pdr.), 2 M.G. AA. Triple expansion. 1.H.P.: 250=12 kts. Yarrow

Boilers: Complement:

Built by Yarrow Co. Ltd., Scotstoun, Glasgow. Launched in 1920. Of steel construction. Converted from wood to oil fuel burning. In the Upper Amazon Flotilla. Pennant No. 16.

AMERICA
Displacement:
Dimensions:
Guns:
Machinery:

240 tons
133×19½×4½ feet
2—3 pdr., 4—12·7 mm. AA.
Triple expansion. I.H.P.: 350=14 kts.

Complement:

General Built by Tranmere Bay Development Co. Ltd., Birkenhead. Launched and cometed in 1904. Of steel construction. Converted from coal to oil fuel burning. In e Upper Amazon Flotilla. Pennant No. 15.

IQUITOS

Displacement: Dimensions: Guns:

50 tons $77\times12\times7\frac{1}{2}$ feet 2-37 mm., 2-20 mm., 2 M.G. AA. Triple expansion. Speed=7 kts. Machinery:

General
Built in France. Launched in 1875. Rebuilt in 1896. Refitted in 1936. Converted merchant vessel. Pennant No. 18.
Disposals
Of the six motor launches of the former United States Coast Guard type, officially rated as Cozo-Submarinos (Submarine chasers), CS-1 and CS-2 were disposed of on 29 May 1958 and 29 May 1959, respectively, and CS-3, CS-4, CS-5 and CS-6 in Mar. 1961.

LANDING SHIPS

CHIMBOTE (ex-M/S Rawhiti, ex-U.S.S. LST 283) 34

1,625 tons standard, 4,050 tons full load 328 (o.a.), 315 (pp.) \times 50 <14 $\frac{1}{2}$ (max.) feet Displacement: Dimensions: Guns:

328 (6.d.), 315 (pp.) > 50 < 14 j (max.) feet 1—3 inch
Diesel. 2 shafts. B.H.P.: 1,700 10 kts.
600 tons (oil tanks); 1,100 tons (ballast tanks) 24,000 miles at 9 kts.
Accommodation for 16 officers and 130 men Machinery: Oil fuel: Radius: Complement:

General

Former U.S. tank landing ship of the 1-510 Series. Built by American Bridge Co., Ambridge, Pennsylvania, Laid down on 2 Aug. 1943, launched on 10 Oct. 1943 and completed on 18 Nov. 1943. Sold to Peru by a British firm in 1951.



CHIMBOTE

1965, Peruvian Navy, Official

PAITA (ex-U.S.S. Burnett County, LST 512) 35 (ex-AT 4)

1,653 tons standard (4,080 tons full load) Displacement: 316 (w.l.), 328 (o.a.)×50×14½ (max.) feet 6—40 mm. AA.; 6—20 mm. ÅA. G.M. diesels. 2 shafts, B.H.P.: 1,700=10 kts. 13 officers, 106 mer Dimensions: Guns: Machinery: Complement:

Former U.S. tank landing ship of the 511-1152 Series. Built by Chicago Bridge & Iron Co., Seneca, Illinois. Laid down on 29 July 1943, launched on 3 Dec. 1943 and completed on 8 Jan. 1944. Purchased by Peru in 1957, Employed as a training ship for the Peruvian Naval Academy.



PAITA

1966, Peruvian Navy, Official

MEDIUM LANDING SHIPS

2 "Lomas" Class.

ATICO (ex-U.S.S. LSM 554)

LOMAS (ex-U.S.S. LSM 396)

Displacement: Dimensions: Guns: Machinery: Oil fuel:

513 tons standard (913 tons full load)
196 (w.l.), 203½ (o.a.)×34 ×7 feet
2—40 mm, AA., 4—20 mm, AA.
Diesels, 800 r.p.m. 2 shafts, B.H.P.: 3,600 ·12 kts.
165 tons (oil tanks)
Accommodation for 116 (10 officers and 106 men) Complement:

General Former U.S. medium landing ships of the LSM type. Both built by Charleston Navy Yard, Charleston, S.C., U.S.A. Purchased by Peru in 1959.

Laid down 3 Mar. 1945 13 Dec. 1944 Name Atico Lomas Pennant No. 37 36 Launched Completed 14 Sep. 1945 23 Mar. 1945 22 Mar. 1945 2 Jan. 1945

The landing craft of ex-U.S. LCT type, BT 1 and BT 2, were disposed of in 1958.



ATICO

1960, Peruvian Navy, Official

Floating Docks

The former United States auxiliary floating dry dock ARD 8 was transferred to Peru in Feb. 1961: displacement: 5,200 tons; dimensions; 492 feet length, 84 feet beam, 5\frac{3}{2} to 33\frac{1}{2} feet draught. Pennant No. changed from WY 20 to ADF

The former United States auxiliary floating dry dock ARD 8 was transferred to Peru in Feb. 1961: displacement: 5,200 tons; dimensions; 492 feet length, 84 feet beam, 5\frac{1}{2} to 33\frac{1}{2} feet draught. Pennant No. changed from WY 20 to ADF 112 in 1964.

The former United States floating dock AFDL 3, launched in Oct. 1964, was transferred to Peru in July 1959:—displacement: 1,900 tons; dimensions; 288 feet length, 64 feet beam, 8\frac{1}{4} to 31\frac{1}{2} feet draught. Pennant No. changed from WY 19 to ADF 111 in 1964.

TRANSPORTS

INDEPENDENCIA (ex-U.S.S. Beliatrix, AKA 3, ex-Rayen, AKA 20) 21

6,194 tons light (14,225 tons full load) Displacement: Maritime Commission deadweight, 8,656 tons 435 (w.l.), 459 (o.a.)×63×26½ feet 1 Nordberg diesel. 1 shaft. B.H.P.: 6,000=16·5 kts. Measurement: Dimensions:

General

Former U.S. attack cargo ship. Built by Tampa Shipbuilding Co., Tampa, Florida, In 1941, Transferred to Peru at Bremerton, Washington on 20 July 1963 under the Military Aid Programme. Training ship for the Peruvian Naval Academy.



INDEPENDENCIA

1966, Peruvian Navy, Official

ILO (ex-Norlindo)

Displacement: Dimensions: Machinery:

8,385 tons full load $388\frac{1}{2}\times50\frac{1}{2}\times9$ feet Diesels. 1 shaft. B.H.P.: 1,700=10·5 kts.

General Built at Sturgeon Bay, Wis., U.S.A., by Leatham D. Smith Shipbuilding Co., in 1945. Acquired by the Peruvian Navy from Benham and Boyesen Inc., Norway in 1959. Pennant No. changed from 33 to 133 in 1964.



ILO

1962, Peruvian Navy, Official

CALLAO (ex-Monserrate)

7,790 tons full load 5,578 tons gross 459×56×22 feet (depth 35 feet) 2 diesel motors. Speed=14 kts. 100 (13 officers, 87 ratings) Displacement: Measurement: Dimensions: Machinery: Complement:

Former Hamburg America liner. Built by Bremen Vulkan Yard, Bremen-Vegesack. Launched in 1938. Salved and seized on 1 Apr. 1941 by the Peruvian Government, after scuttling by the Germans. Employed as a troop transport and cargo carrier. Pennant No. changed from 32 to 132 in 1964.

Disposals

The German type transport Rimoc (ex-Eten, ex-Rhakotis) was scrapped in July 1960.

Disposals of Supply Ships
The fleet supply ships and oilers Cabo Blanco (ex-Mariscall Castilla, and Organus (ex-Olaya) of the Canadian type, were scrapped in 196



CALLAO

1965, Peruvian Navy, Official

WATER CARRIER

ACA 141 (ex-U.S. YW 122)

1,235 tons full load 174×32 feet 200,000 gallons. Displacement:

General

Former U.S. water barge. Built by Herny C. Grebe & Co. Inc., Chicago, III. Lent to Peru in July 1963.

Disposal of Rescue Ship
The submarine salvage vessel Guardian Rios was stricken on 10 July 1958.

OILERS

2 "Sechura" Class

SECHURA

Displacement: Measurement: Dimensions: Machinery:

8,700 tons 4,300 tons gross, 6,000 tons deadweight 385 (o.a.), 360 (w.l.)×52×21½ (max.) feet Burmeister & Wain diesel. B.H.P.: 2,400=12 kts.

(13:25 kts. on trials)
2 Scotch with Thornycroft oil burners for cargo tank

General
Sechura, built by John I. Thornycroft & Co. Ltd., Woolston Southampton, England, was laid down late in 1952, launched on 12 Nov. 1954 and completed in Feb. 1955. Designed for transferring fuel to warships at sea. Zorritos, built by Servicio Industrial de la Marina in the Arsenal Naval del Callao, Peru, was laid down on 8 Oct. 1955, and launched on 8 Oct. 1958, Pennant Nos. were changed from 54 and 58 to 154 and 158, respectively, in 1964.

A photograph of Sechura appears in the 1956-57 to 1963-64 editions.



ZORRITOS

1964, Peruvian Navy, Official

2 "Talara" Type

LOBITOS

TALARA

ZORRITOS

Displacement: Measurement:

Dimensions:

7,000 tons 4,800 tons deadweight (about 35,000 barrels) 336½×508×22½ feet Burmeister & Wain diesel. Type 562,VT-F115, B.H.P.: 2,400=12 kts. Machinery:

General 2,400=12 kts.

Talara, built in Denmark to the requirements of Lloyd's Register was laid down early in 1953 by Burmeister & Wain's Maskin-Og Skibsbygger, Copenhagen, and completed in 1955. Pennant No. changed from 53 to 153 in 1964.

Lobitos, built by Servicio Industrial de la Marina in the Arsenal Naval del Callao, Peru, was launched in May 1965.

Disposal

The old ciler Parinas (ex-Siomand) of the Thornycroft type was scrapped in 1961.

The old oiler Parinas (ex-Sjomand) of the Thornycroft type was scrapped in 1961.



TALARA

Official

TUGS

I Ex-U.S. ATF Type

RIOS (ex-U.S.S. Pinto, ATF 90)

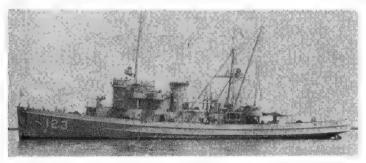
Displacement:

Measurement:

1,235 tons standard (1,675 tons full load) 195 (w.l.), 205 (o.a.)×38;×12 (mean), 15; (max.)

4 diesels with electric drive, B.H.P.: 3,000=16-5 kts. Machinery:

General Former United States fleet ocean tug of the "Apache" class. Launched on 5 Jan. 1943. Transferred to Peru in 1960 and delivered in Jan. 1961. Fitted with powerful pumps and other salvage equipment. Pennant No. 123.



RIOS

1962, Peruvian Navy, Official

I Ex-U.S. ATA Type

UNANUE (ex-U.S.S. Wateree, ATA 174)

534 tons standard (852 tons full load) official revised figure) 133 $\frac{1}{4}$ (w.l.), 143 (o.a.)×33 $\frac{1}{8}$ ×13 $\frac{1}{2}$ feet General Motors diesel-electric B.H.P.: 1,500=-13 kts.

Machinery:

General General Former United States auxiliary ocean tug of the "Maricopa" class. Built by Levingston S.B. Co., Orange, Texas. Laid down on 5 Oct. 1943, launched on 18 Nov. 1943 and completed on 20 July, 1944. Purchased from the U.S.A. in Nov. 1961 under MAP. Pennant No. 136.

Disposals
Of the two ex-U.S. ATR type tugs, Selendon (ex-U.S.S. ATR 31) was officially stricken from the Navy List on 18 Sep. 1964, and Olaya (ex-U.S.S. ATR 25) was scrapped in 1961.

PARAGUAY

Administration

Commander of the Navy: Capitan de Navio Don Benito Pereira Saguier

Personnel

1966: 1,900 officers and men, including coastguard and marines

RIVER GUNBOATS (Canoneros)

2 "Humaita" Class

Builders Laid down Launched Completed Name HUMAITA (ex-Capitan Cabral) C 2 Odero, Genoa Apr. 1929 1930 May 1931 PARAGUAY (ex-Comodor Meya) C 1 Odero, Genoa Apr. 1929 1930 May 1931

Displacement: Dimensions:

636 tons standard (865 tons full load) 231 \, 35 \times 5\frac{1}{4} \, feet \, 4--4.7 \, inch, 4--3 \, inch AA., 2 M.G.

Guns: Mines: Armour: Machinery: Boilers:

Radius

6 "side amidships, \" deck, \" C.T.
Parsons geared turbines. 2 shafts. S.H.P.: 3,800 -17 kts.

2 150 tons Oil fuel:

1.700 miles at 16 kts.

Complement: Rated as gunboats but also fitted for minelaying. The armour is of high tensile steel.



PARAGUAY

Official

I Ex-Argentinian Minesweeper

BOUCHARD

Displacement: Dimensions: Guns: Machinery: Oil fuel:

450 tons standard, 620 tons normal (650 tons full load) 164 (pp.), 197 (o.a.) · 24×8‡ (max.) feet 4—40 mm. Bofors AA.; 2 M.G. 2 sets MAN 2-cycle diesels. B.H.P.: 2,000-16 kts. 50 tons 3,000 miles at 12 kts. 70

Radius

Former Argentinian minesweeper of the "Bouchard" class. Built at Rio Santiago Naval Shippard, Laid down in 1935, Launched on 20 Mar, 1936, Can carry mines. Transferred from the Argentinian Navy to the Paraguayan Navy in Apr. 1964.

PATROL LAUNCHES (Launchas Patrulleras)

2 Ex-U.S. Coast Guard Cutters

P 1 (ex-U.S.C.G.C. 20417) Displacement: Dimensions:

P 2 (ex-U.S.C.G.C. 20418)

Guns: Machinery:

16 tons $45\frac{1}{2}$ (o.a.) \times 13 $\frac{1}{2}\times3\frac{1}{2}$ feet 2—20 mm. AA. 2 petrol motors. 2 shafts. H.P.: 190=20 kts. 10

Complement: General

Of wooden construction. Built in the United States in 1944. Acquired from the United States Coast Guard in 1944.

RIVER PATROL BOATS (Avisos de Guerra)

CORONEL MARTINEZ

Displacement: Dimensions: Guns: Machinery:

80 tons $71\frac{1}{7} \times 18 \times 8\frac{1}{4}$ feet 1—3 inch. 2—37 mm. I.H.P.: 150 6.5 kts.

Medium type of river patrol boat and general utility craft. Pennant No. A. 2.

CAPITAN CABRAL (ex-Adolfo Riquelme)

Displacement: Dimensions: Guns: Machinery:

uro K(quelme) 180 tons standard (206 tons full load) 98! (pp), 107½ (o.a.)×23½×9½ feet 1—3 inch Vickers, 2—37 mm. Vickers, 4 M.G. Triple expansion, 1 shaft, I.H.P.: 300 = 9 kts. 47

Complement: General

neral Former tug, Built by Werf-Conrad, Haarlem, Launched in 1907. Of wooden con-ruction, Pennant No.: Al. A photograph appears in the 1954-55 to 1963-64 struction. editions.

TENIENTE HERREROS

Displacement: Dimensions: Guns: Machinery:

41 tons 63½×11×6½ feet 4 M.G. 1.H.P.: 300=5·5 kts.

General
Small type of river patrol boat. Built in the Netherlands in 1908. Pennant No.: A 3.

Small Tug

The small harbour tug YTL 559 was transferred to Paraguay by the U.S.A. under the Military Aid Programme in Mar. 1963. (66½×17×5 feet. Diesel. 300 H.P.). Built by Everett Pacific S.B. & D.D. Co., Wash.

PHILIPPINES

Administration

Flag Officer in Command, Philippine Navy: Commodore Santiago C. Nuval, P.N.

Naval, Military and Air Attaché in London: Colonel Isabelo Ruiz Castro.

Ships

Ships names are prefixed by R.P.S. (Republic of Philippines Ship). Names adopted are geographical locations, mostly provinces.

Personnel

1966: 5,000 officers and men

Mercantile Marine

Lloyd's Register of Shipping: 184 vessels of 500,541 tons.

ESCORT PATROL VESSELS

CEBU E 28 (ex-PCE 881) ILOILO E 32 (ex-PCE 897)

LEYTE E 30 (ex-PCE 885)
NEGROS OCCIDENTAL E 29 (ex-PCE 884)
PANGASINAN E 31 (ex-PCE 891)

Displacement:
Dimensions:
Guns:
Machinery:

640 tons standard (903 tons full load)
180 (w.l.), 184½ (o.a.)×33×9½ feet
1—3 inch, 3—40 mm. (E31, 6—40 mm.), 4—20 mm.
2 G.M. diesels. 2 shafts. B.H.P.: 1,800=15 kts.

General Former U.S. escorts. Built in Portland, Oregon, U.S.A., by Albina Eng. & Mach, Works (E 28, 29, 30) and Willamette Iron & Steel Corp. (E 31, 32). All launched in 1943-44. A photograph of Leyte appears in the 1956-57 to 1964-65 editions. Samar M 33 (ex-U.S.S. Project, AM 278) was turned over to the Bureau of Coast and Geodetic Survey on 19 May 1960.



NEGROS OCCIDENTAL

1965, Philippine Navy, Official

RIZAL E 69 (ex-U.S.S. Murrelet, MSF 372, ex-AM 372)

Displacement: Dimensions:

120 cms standard (1,250 tons full load)
150 tons standard (1,250 tons full load)
150 tons, 221 (o.a.) \(\times 22\frac{1}{2} \) (max.) feet
2—3 inch, 50 cal. (single); 4—40 mm. AA. (2 twin);
4—20 mm. AA. (2 twin)
1 ASW projector; 1 ASW triple-barrel torpedo mounting; 2 D.C. projectors, 2 D.C.T.
Diesel-electric. 2 shafts. B.H.P.: 3,532=18 kts.

A/S weapons:

Machinery: General
Former U.S. fleet minesweeper of the "Auk" class, Built by Savannah Machine
& Foundry Co. Launched on 24 Dec. 1944. Transferred on 18 June 1965. Minesweeping gear removed. Used as an escort patrol ship and re-designated PCE.

 BATANGAS C 24 (ex-PC 1134)
 CAPIZ C 27 (ex-PC 1564)

 BOHOL C 22 (ex-PC 1131)
 NUEVA ECIJA C 25 (ex-PC 1241)

 Displacement:
 330 tons standard (450 tons full load)

 Dimensions:
 173½ (o.a.)×23×10½ feet

 Guns:
 1—3 inch d.p., 1—40 mm. AA., 5—20 mm. AA.

 Machinery:
 2 G.M. diesels. 2 shafts. B.H.P.: 3,600=18 kts.

General
Former U.S. submarine chasers of steel construction. Built in 1942-44. Transferred in 1947-48. Zamboanga del Sur C 23 (ex-PC 1133) was stricken on 16 Nov. 1956. Negros Oriental, C 26 (ex-PC 1563), sank in a typhoon at Guam in Nov. 1962, was raised, but stricken on 24 Jan. 1963.



1965. Philippine Navy, Official

LAGUNA P 12 (ex-PCS 1403)

TARLAC P 11 (ex-PCS 1399, ex-YMS 450)

Displacement: Dimensions: Guns:

Machinery:

230 tons standard (300 tons full load) 136 $(o,a.)\times24\frac{1}{2}\times8\frac{1}{2}$ feet 1—3 inch, 1—40 mm., 4—20 mm. 2 G. M. diesels. 2 shafts. B.H.P.: 800=14 kts.

Former U.S. submarine chasers of wooden construction. Built in 1943-44. Transferred in Jan. 1958. Photograph of Laguna in the 1956-57 to 1961-62 editions.

COMMAND SHIPS

ROXAS (ex-Lapu-Lapu)

Measurement:

Guns: Machinery:

2,200 tons gross 2-40 mm.; 2-20 mm. AA. B. & W. diesels. 2 shafts. B.H.P.: 5,000=16.5 kts.

General
Formerly the Presidential Yacht, Acquired from Japan under the reparation payment programme. Built at Ishakawajima, Japan. Launched in 1958 and completed in 1959. Originally named Lapu-Lapu after the chief who killed Magellan. On 9 Oct. 1962 the ship was recommissioned and renamed Roxas after the late Manuel Roxas, first President of the Philippine Republic.
The command ship Rajah Soliman D 66 (ex-U.S.S. Bowers, APD 40, ex-DE 637) sank in a typhoon at Bataan National Shipyard in June 1964, was raised, but stricken on 3 Dec. 1964.

A destroyer escort is to be transferred to the Phillipines by U.S.A. in 1966. Two destroyer escorts (see full particulars in the 1964-65 edition) were due from Japan under reparations, but no further news of this project has been officially promulgated



ROXAS

1965, Philippine Navy, Official

PAGASA TP 21 (ex- Santa Maria, ex-Pagasa, ex-Apo 21, ex-U.S.S. Quest, AM 281)

Displacement: Dimensions: Guns:

650 tons standard (945 tons full load) 180 (w.f.), 184½ (o.a.)×33×9¾ feet 1—3 inch, 4—20 mm. AA. Diesel, 2 shafts. B.H.P.: 1,710=14 kts.

Machinery: General

Former U.S. fleet minesweeper. Built by Gulf S.B. Corpn. Launched on 16 Mar. 1944. Of steel construction, Converted into Presidential Yacht.



PAGASA

1965. Philippine Navy, Official

COASTAL MINESWEEPERS

ZAMBALES M 55 (ex-U.S.S. MSC 218)
ZAMBOANGA DEL NORTE M 56 (ex-U.S.S. MSC 219)

Displacement: Dimensions: Machinery:

335 tons standard (375 tons full load)
138 (pp.), 144 (o.a.)×27×8½ feet
G.M. diesels. 2 shafts. B.H.P.: 880=14 kts.

General

Non-magnetic coastal minesweepers of the U.S. "Bluebird" class. Zambales was built by Bellingham Shipyard Co., Washington, laid down in Aug. 1954 and launched on 25 Feb. 1955. Both were transferred under MAP and commissioned at Seattle, Wash., on 7 Mar. and 23 Apr. 1956, respectively.



ZAMBOANGA DEL NORTE

1965, Philippine Navy, Official

PATROL BOATS

AGUSAN G 61 (ex-PGM 39)
ANTIQUE G 51 (ex-PGM 36)
CAMARINES SUR G 48 (ex-PGM 33)
CATAN DUANES G 62 (ex-PGM 40)
LA UNION G 50 (ex-PGM 35)
MASBATE G 52 (ex-PGM 37) MISAMIS OCCIDENTAL G 53 (ex-PGM 38) PALAWAN G 64 (ex-PGM 42) ROMBLON G 63 (ex-PGM 41) SULU G 49 (ex-PGM 34) YACHI G 57 (ex-PGM) YANGA G 59 (ex-PGM) YUNDI G 60 (ex-PGM)

Displacement: Dimensions:

95 tons standard (143 tons full load)
110×17×6½ feet
1—60 mm. mortar, 2—40 mm. AA., 4—50 cal. M.G.
Diesel. 2 shafts. B.H.P.: 1,540=18 kts.

Guns: Machinery:

General
G 40-53 were built by Georgia Shipbuilding Co., St. Mary's Georgia. Motor gunboats with the basic design of the former 110 ft. SC type of the U.S. Navy. The first four were delivered to the Philippine Navy in 1955 and G 52 and G 53 in 1956. G 61-64 were built by Tacoma Boatbuilding Co., Tacoma, Washington, for transfer under MAP. All steel, G 61, completed in Aug. 1959, and G 62 were transported to the Philippines aboard ship in Feb. 1960, followed by G 63 and G 64 in Apr. 1960. A photograph of Camarines Sur appears in the 1956-57 to 1961-62 editions.



ROMBLON

1962, courtesy Mr. W. H. Davis

ALERT P 16 (ex-SC 1267) CAVITE P 19 (ex-SC 981)

MALAMPAY SOUND P 20 (ex-SC 1274) MOUNTAIN PROVINCE R 15 (ex-SC 736) SURIGAO P 17 (ex-SC 747)

Displacement: Dimensions: Guns: Machinery:

85 tons standard (130 tons full load) 111 (o.a.) \times 17 \times 6 feet 1—40 mm. AA., 3—20 mm. AA. Diesels. 2 shafts. B.H.P.: 1,000=14·18 kts.

General General
Former U.S. small submarine chasers of wooden construction. Built in 1942-43.
Transferred in 1946-48. Cagayan P 14 (ex-SC 731), Ilocus Sur P 16 (ex-SC 739) and Isabella P 18 (ex-SC 750) were stricken in 1956 when one was transferred to the Bureau of Customs.

REPAIR SHIP

AKLAN (ex-U.S.S.Romulus, ARL 22, ex-LST 926)

Displacement: Dimensions: Guns:

1,625 tons light (4,100 tons full load)
316 (w.l.), 328 (o.a.)×50×11 feet
8—40 mm. AA.
G.M. diesels. 2 shafts, B.H.P.: 1,800=11·6 kts.

General Former U.S. landing craft repair ship transferred to the Philippine Navy under the Military Aid Programme in Nov. 1961.



AKIAN

1965. Philippine Navy, Official

SURVEY SHIP

New Construction

A survey ship is to be built in Queensland at a cost of £A250,000 as a gift from Australia under the SEATO Aid Agreement.

The survey ship Sequola, ex-U.S. Coast Guard buoy tender, is no longer on the Navy list. Sister ship Anemone was stricken from the list in 1957.

HYDROFOIL PATROL BOATS

CAMIGUGIN H 72

SIQUIJER H 73

Displacement: Measurement:

28 tons

Dimensions: Guns: A/S weapons: Machinery:

60 tons gross $68\frac{1}{2}\times15\frac{3}{2}$ $(24\frac{1}{2}$ folls) \times 7 feet 1-20 mm. AA. 1 torpedo launcher Mercedes Benz diesel (MB 20, 12 cyl.). 2 shafts. B.H.P.: 1,250=38 kts.

Built by Cantiere Navale Leopoldo Rodriguez, Italy (Messina, Sicily) for the Philippine Navy. Laid down on 26 May and 28 Oct. 1964 for delivery in Apr. 1965. For military use and police patrol.

Two hydrofoil boats, 90 tons gross, $69 \times 15\frac{1}{2}$ feet, 1,100 H.P. diesel, are being built by Hitachi Shipbuilding & Engineering Co., Kanagawa, Japan, for the Phillipine Government, but it is not stated if they are for the Navy.

LANDING SHIPS

ALBAY T 39 (ex-LST 865)

Machinery:

BULACAN T 38 (ex-LST 843) MISAMIS ORIENTAL T 40 (ex-LST 875)

Displacement: Dimensions: Guns:

1,625 tons light (4,080 tons full load)
316 (w.l.), 328 (a.a.)×50×14 (max.) feet
7—40 mm. AA., 2—20 mm. AA.
Diesel. 2 shafts. B.H.P.: 1,800=12 kts.

General

General
Former U.S. landing ships of the LST type. Cotobato, T 36 (ex- LST 75) and Pampanga T 37 (ex-LST 842) were stricken. LST 72 and LCU 117 were sold.



ALBAY

1965, Philippine Navy, Official

BATANES LP 65 (ex-U.S.S. LSM 236) ISABELA LP 41 (ex-U.S.S. LSM 463))
ORIENTAL MINDORO LP 68 (ex-U.S.S. LSM 320)

Displacement: Dimensions:

Guns: Machinery: 743 tons beaching (912 tons full load)
196\(\frac{1}{2}\) (w.l.), 204 (o.a.)\(\times 34\)\(\frac{1}{2}\)\(\times 8\)\(\frac{1}{2}\)
2—40 mm. AA.
Direct drive diesel. 2 shafts. B.H.P.: 2,800=12.5 kts.

General

General
Former medium landing ships. Batanes was transferred to the Philippines on 15
Sep. 1960 at Seattle, Washington. Isabella was refloated on 1 Jan. 1964 after being aground since Sep. 1963.

Davao I 34 (ex-LCI 1058) and Lanao I 35 (ex-LCI 1059), former U.S. Infantry Landing Craft used as lighthouse tenders, are no longer on the Navy List.



BATANES

1962, courtesy Mr. W. H. Davis

OILERS

LAKE NAUJAN Y 43 (ex-U.S. YO 173)

Displacement: Dimensions:

521 tons standard (1.400 tons full load) 174 (σ . σ .) \times 32 \times 13 $\frac{1}{4}$ feet 2—20 mm. Diesel. B.H.P.: 560=8 kts.

General Ex-U.S. YO type. A photograph appears in the 1953-54 to 1960-61 editions. The small oiler Lake Taal Y 41 (ex-Y 19) is no longer on the Navy List.

LIGHTHOUSE TENDERS

BOJEADUR L 46 (ex-U.S. FS 203)

LAUIS LEDGE L 45 (ex-U.S. FS 185)

Displacement: Dimensions:

470 tons standard (811 tons full load) 180 (0.a.)×32×10 feet Diesel. 2 shafts. B.H.P.: 1,000=11 kts.

Machinery:

General
Ex-U.S. FS type. Photograph of Louis Ledge in 1956-57 and 1957-58 editions.

PEARL BANK L 47 (ex-U.S. OL 4)

Displacement:

162 tons standard (301 tons full load)
120 (o.c.)×24×8 feet
2—20 mm. AA.
Diesel. 2 shafts, B.H.P.: 240=6 kts.

Dimensions: Guns:

Machinery:

Ex-OL type. A photograph appears in the 1953-54 to 1957-58 editions.

WATER CARRIER

LAKE LANAO Y 42 (ex-U.S. YW 125)

Displacement: Dimensions: Guns: Machinery:

1,235 tons full load 174 (o.g.)×32×15 feet 2-20 mm. AA, Diesel, B.H.P.: 640=9 kts.

TUGS

Rescue tug returned to U.S. from United Kingdom, and then transferred to the Philippines. Photograph in the 1956-57 to 1957-58 editions.

IGOROT 222 (ex-YTL 572)

MARANAO 221 (ex-YTL 574) MANGYAN 223 (ex-ST 1312)

Small harbour tugs. U.S. YTL 429 and 449 were transferred under MAP in 1963.

Coastguard Utility Boats
There are 15 ex-U,S, Coast Guard Cutters, Nos. 100-114, No names assigned.

Administration

Commander of the Polish Navy: Vice-Admiral Zdzislaw Studzinski,

Chief of Naval Staff: Rear-Admiral Ludwik Janczyszyn.

Naval, Military and Air Attaché in London: Colonel M. Roman.

POLAND

Naval, Military and Air Attaché in Washington: Colonel Eugeniusz Wysokinski.

Ships

Strength, 1966: 5 destroyers, 11 submarines, 45 patrol vessels, 32 minesweepers, 36 landing craft, 11 auxiliaries. 55 service craft.

Polish warship names are prefixed by "O.R.P."

Personnel

1966: 20,020 (1,820 officers and 18,200 men)

Mercantile Marine

Lloyd's Register of Shipping: 390 vessels of 1,039,966 tons gross

SUBMARINES (Okrety Podwodne)

4 Ex-U.S.S.R. "W" Type

KONDOR ORZEL 292

Displacement: submerged 240×22×15 feet

Dimensions:

240×22×15 feet
6—21 inch (4 bow, 2 stern).
18 torpedoes carried
40 mines or 18 torpedoes
Diesel-electric, 2 shafts. Diesels:
B H.P.: 4,000=17 kts, (surface)
Electric motors; H.P.: 2,500=
15 kts. (submerged) Mines:

Radius:

Complement:

A class of medium size long range submarines built in the U.S.S.R. and transferred to the Polish Navy

Nomenciature
Kondor means Condor, Orzel means Eagle and Sokol means Falcon.



SOKOL

1966, Skyfotos

6 Ex-U.S.S.R. "M" Type

KASZUB P 105 KUJAWIAK 305 MAZUR 302 KRAKOWIAK 303 MAZOWSZE 306 SLAZAK 304 (ex-Kurp) (ex-Podhal (ex-Podhalanin)

Displacement:

Tubes: B.H.P.: 1,000=13 kts. Machinery: Diesels.

Diesels, B.H.P.: 1,000=13 kts. (surface)
Electric motors, H.P.: 800=10 kts. (submerged)
21 tons

Oil fuel: Radius:

4,000 miles at 8 kts. (surface). 90 miles at 3 kts. (submerged) 24

Complement:

Guns:

Genard Former Soviet "MV" Class, coastal submarines M 100-105. All built in 1944-1950. Transferred to the Polish Navy in 1956-57. One (said to be Kurp) ran aground and was so badly damaged that she was at one time reckoned a total loss, but it is reported that she has been renamed Mazoweze

Transfer
Two "W" class submarines were sold by Poland to
Indonesia in Aug. 1959, and there were then reports
that they were to be replaced.



KASZUB

1965, Polish Navy, Official



KUJAWIAK

Sergel Romanov

I Netherlands Built

Displacement: Dimensions: Guns: Tubes:

1,092 tons surface (1,450 tons 373½ (pp.), 275½ (o.a.)×22× 13 feet 1—4-1 inch, 2—40 mm, AA.

8—21 inch
40
2 Sulzer Diesels. B.H.P.: 4,740
=19 kts. surface
Electric motors, H.P.: 1,000=9
kts. submerged
56 Mines: Machinery:

Complement:

Builders Rotterdam Dry Dock Co.

Laid down

Launched 17 Oct. 1938

Completed 1939



The three submarines of the "Wilk" class, Rys, Wilk and Zbik, were broken up in 1957.

SEP

1965, Polish Navy, Official

DESTROYERS (Niszczyciele)

4 Ex-U.S.S.R. "Skory" Class

GROM (ex-Smetlivy)

WICHER (ex-Skory)

Displacement:

2,600 tons standard (3,500 tons

Dimensions:

full load)

Guns:

3931 (pp.), 420 (o.a.)×41×15 393‡ (pp.), 420 (o.a.)×41×15 feet
4—5-1 inch (2 twin); 2—3 inch
AA.; 7—37 mm. AA.
10—21 inch (2 quintupled)
4 D.C.T.
80 capacity
Geared turbines. 2 shafts. S.H.P.;
70,000=36 kts.

Tubes: A/S weapons: Mines:

Machinery:

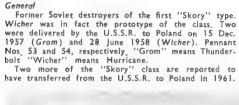
Boilers: Oil fuel: Radius:

4 high pressure 700 tons 4,000 miles at 15 kts. 280

Complement:









F/ICHER

1965, Polish Navy, Official

1959, Sergel Romanov

I British Built

Displacement:

Dimensions:

2,144 tons standard (3,383 tons full load)
357 (pp.), 374 (o.a.)×37×10¼

Guns:

feet 8—4 inch AA., 10—37 mm, AA 3—21 inch (tripled) 4 D.C.T., 22 D.C. and racks Parsons geared turbines 2 shafts. S.H.P.; 54,000=39 kts. 4, of 3-drum type

Tubes: A/S weapons: Machinery:

Complement:

Name means Lightning. Originally fitted for mine-laying,, and could carry 7 mines; but no longer has minelaying capabilities. Bows were strengthened for ice navigation. The original armament was 7—4.7 mm AA., 4 M.G., 6—21 inch tubes (tripled), 2 D.C.T. The ship was completely dismantled in 1958 down to the hull, and superstructure was entirely rebuilt and armament modified in 1959-60.

Engineering
Boilers work at 385 lbs per sq. inch pressure with
200 degrees of superheat. Ship exceeded her designed
speed on trials.

Disposal

The old destroyer Burza was officially withdrawn from active service with the Polish Navy in 1962 to be used as a museum ship.

BLYSKAWICA

Pennant No. 271

Builders J. Samuel White & Co Ltd., Cowes, Isle of Wight Laid down 1935

Launched 1 Oct. 1936

Completed 1937



BLYSKAWICA

1965, Polish Navy, Official

ESCORT VESSEL

New Construction

Displacement: Dimensions: Guns:

1,030 tons standard 288 $\frac{1}{4}$ \times 31 $\frac{1}{2}$ \times 10 $\frac{1}{2}$ feet 3—3.9 inch, 8—37 mm, AA,

Tubes: Mines: Machinery:

-21 inch S-21 inch
Fitted for laying
Geared steam turbines, 2 shafts.
S.H.P.: 24,000=28 kts. Construction

Construction

The construction of an escort vessel or frigate is in the early stages. A transitional type based on the design of the Soviet "Riga" class, she is being built in the Polish yard at Gdynia.

FLEET MINESWEEPERS

"Orlik" Class

JASTRZAB 615

614

ORLIK 613

Guns:

6-25 mm, AA.

General Flushdecked minesweepers of a new type built at the Stocznia Yard in 1963. See photograph in Addenda.

12 Ex-U.S.S.R. "T 43" Type

BIZON 605 BOBR 606 DELFIN 611 DZIK 604 FOKA 609 LOS 603

MORS 610 ROSOMAK 607 TUR 602

ZUBR 601

Displacement: Dimensions:

500 tons standard (600 tons full load) $200\times27\frac{1}{2}\times9$ feet 4—37 mm. AA., 8—13 mm. M.G. AA. Diesels. 2 shafts. Speed=18 kts.

Machinery: Complement: General

Fleet minesweepers of the Soviet "T43" type built in Poland at Stocznia Gdynska,

Gdynia, in 1957-62. Photographs

A photograph of Tur appears in the 1958-59 edition, and of Los in the 1959-60 1964-65 editions.



ZBIK

1965. Polish Navy, Official

COASTAL MINESWEEPERS (Tralowce)

4 "Bird" Class

CZAIKA (10 Apr. 1935) D 45 MEWA (1935)

RYBITWA (26 Apr. 1935) D 46 KOMPAS, ex-Zuaw (22 Aug. 1938)

Displacement: Dimensions:

Complement:

140 tons standard (183 tons full load) 139 $1\times211\times51$ feet 2—37 mm. 2 M.G., except Kompas, none Diesel. B.H.P.: 1,040=15 kts.

Guns: Machinery:

General

All built im Poland, Mewa and Kompas at Gdynia, Czajka and Rybitwa at
Modlin. Launch dates above. Recovered from German hands in 1945. Czajka
(meaning Lapwing) had been renamed Westerplatte. Mewa means Seagull, and
Rybitwa. Tern: these two were numbered MT 6 and 7 respectively, by the Germans.
Kompas is used as a surveying vessel, HG 11, (20 minesweeping boats were built in Polish yards, 1955-60.)

Photographs A photograph of Mewa appears in the 1958-59 to 1964-65 editions.



RYBITWA

1966



CZAJKA

1965, Polish Navy, Official

GUIDED MISSILE PATROL CRAFT

No. 080

2 U.S.S.R. "Osa" Type

Displacement: Dimensions: Guided weapons: Guns:

160 tons standard (200 tons full load) 121 $\frac{1}{3}$ (pp.), 131 $\frac{1}{2}$ (o.a.)×20×6 $\frac{1}{2}$ feet 4 large hood type missile launchers in two pairs abreast. 4—25 mm. (2 twin, 1 forward, 1 aft.) 3 diesels, B.H.P.: 4,800=35 kts.

Machinery; Complement:

General Fast vessels of the motor torpedo boat type but with a large hull and four missile launchers in two pairs abreast the superstructure as compared with the earlier motor torpedo boat convertions which have one pair of launchers aft. Reported to have a surface-to-surface missile range of about 15 miles.



"Osa" Class No. 080

1966, col. Borg

KG 81

10 U.S.S.R. "Komar" Type

Displacement: Dimensions: Guided weapons:

Guns: Machinery: 75 tons standard (100 tons full load) 88 (o.a.) \times 21 \times 6 feet

88 (0.0.) Alino 10.20 20 2 hood type missile launchers, one either side aft. 2—25 mm. AA. (1 twin forward) 3 diesels. B.H.P.: 4,800=40 kts.

Complement: General

A new type of strike craft converted from "P 6" class motor torpedo boats. Fitted with two surface-to-surface missile launchers aft in hooded casings at a steep angle to the deck level.

PATROL VESSELS

8 Ex-U.S.S.R. "Kronstadt" Class

CZUINY 368 GROZNY 362

NIEUGIETY 361 ZAWZIETY 363 WYTRWALY 367 ZRECZNY 366

ZWINNY 365 ZWROTNY 364

Displacement: Dimensions: Guns: Machinery:

300 tons standard (350 tons full load) $167\frac{1}{2}\times19\frac{1}{2}\times9$ feet $1-3\cdot9$ inch. 2-37 mm. AA., 4-13 mm. M.G. AA. 2 diesels. Speed=27 kts.

Complement: General

General Former Soviet submarine chasers of the "Kronstadt" class. Four built in 1953 were acquired by Poland in 1957. Grozny, Wytrwaly, Zreczny Zwinny (names mean Strong, Energetic, Clever, Clever and Speedy), were delivered on 15 Dec. 1957. Photographs

A photograph of Zwrotny appears in the 1958-59 to 1964-65 editions.



NIEUGIETY

1965, Polish Navy, Official

PATROL BOATS

8 "OP" Type

OP 103 OP 104

OP 107 OP 108

OP 101 OP 102 Displacement: Dimensions:

120 tons

124 ½×19 ½×5 feet 2—37 mm. AA. Depth charges Diesel motors. Speed: 20 kts.

General
Similar to the German R-boat type. Built at Gdynia. Launched in 1956. (Eight units of the "Gdansk" class patrol craft, including OP 212. built in 1960, and four units of the "Oksywie" class patrol craft, have also been reported.)

9 "KP" Type

KP 122 KP 123

KP 124 KP 125

KP 126

Displacement: Machinery:

60 tons 2 M.G. AA. (in twin mounting) 3 speed: 15 kts.

Small patrol boats reported to be under the jurisdiction of the Frontier Guard.

MOTOR TORPEDO BOATS (Scigacze torpedowe)

20 Ex-U.S.S.R. "P 6" Type

KT 101 KT 102 KT 103 KT 104 KT 109 KT 110 KT 111 KT 112 KT 99

68 tons full load Displacement: 83×20×6 (max.) fee Dimensions: 4—25 mm. AA., 8 D.C. 2—21 inch 4 diesels, B.H.P.: 4,800=43 kts. Guns: Tubes:

Machinery:

Acquired from the U.S.S.R. in 1957-58. (A new series of M.T.B.'s of Polish design, with gas turbines, is reported to have been constructed n Polish yards).

10 Ex-U.S.S.R. "PA 5" Type

KT 406 (ex-89) KT 407 (ex-90) KT 408 (ex-91) KT 409 (ex-92) KT 400 (ex-83) KT 401 (ex-84) KT 402 (ex-85) KT 403 (ex-86) KT 404 (ex-87) KT 405 (ex-88)

Displacement: 50 tons standard Dimensions:

Guns: Tubes: Diesel motors, Speed circa 50 kts.

General Motor torpedo boats of the Soviet "PA 5" class. Launched from 1956 onwards.



1965, Polish Navy, Official MTB 409



No. 405

1966, col. Borg

10 Ex-U.S.S.R. "PA 3" Type

KT 77 KT 78 KT 75 KT 76 KT 71 KT 72 KT 73

40 tons standard (50 tons full load) Displacement: 85×20×6 feet 4—25 mm. AA. (two twin) 2—21 inch Diesels. Speed=40 kts. Dimensions: Guns: Tubes: Machinery:

Ex-Soviet boats of the "PA 3" type. Built of wood, Launched in 1953-55.

LANDING CRAFT

7 German Design

300 tons full load 131×26×5 (max.) feet 1—77 mm., 1—37 mm. 3 diesels, B.H.P.: 1,000=12 kts. Displacement: Dimensions: Guns: Machinery. Complement:

Utility landing craft of German design. Carry vehicles, tanks or military equip-

10 U.S. LST(5) Type

286 tons standard $177\frac{1}{2}\times32\times4$ (max.) feet 3 diesels. B.H.P.: 670=8 kts. Displacement: Dimensions: Machinery: Complement:

Tank landing craft of American LST type for mechanised vehicles and stores.

TRAINING SHIPS (Okrety szkolne)

GRYF (ex-Zetempowiec, ex-Opplem, ex-Omsk, ex-Empire Contees, ex-Irene Oldendorf)

Measurement: Dimensions: Guns: Machinery:

1,959 tons gross $282\frac{1}{2}\times44\frac{1}{4}\times18\frac{1}{4}$ feet $2-3\cdot9$ inch, 4-37 mm. AA. Steam engines. H.P.: 1,200=10 kts.

General
Former German 'Hansa'' class ship. Built by Burmeister & Wain. Launched in
1944. Taken over in 1947. Transferred to the Navy in 1949. The name was changed
from Zetempowiec to Gryf in 1957. Reported to be used as a hospital ship.



GRYF

Wright & Logan

(ex-Pigmy, ex-Iskra, ex-St. Blanc, ex-Vilssinghr) ISKRA

> 560 tons 128×25×10 feet Diesel engines. B.H.P.: 250=7·5 kts. 30. plus 40 cadets Displacement: Dimensions: Machinery: Complement:

A three masted schooner with auxiliary motors. Built by Muller, Foxhol, Holland. Launched in 1917. A photograph of Iskra appears in the 1961-62 edition.

Dar Pomorza (ex-Prinz Eitel Friedrich), see full details and photograph in the 1961-62 edition, is a training ship of the Polish Merchant Marine.

SURVEYING VESSELS (Okret hydrograficzne)

Displacement: Measurement: Dimensions: 1,000 tons 658 tons gross, 450 tons deadweight $194\frac{1}{2}$ (o.a.), $175\frac{1}{2}$ (pp.) $\times 29\frac{1}{2} \times 14$ fer Steam engine. H.P.: 1,000=11 kts. Machinery:

Trawler of B-10 type. Built in 1944 in Glansk. Converted and structure altered.

The hydrographic vessels Zodlac and Kozlorozec (see details in the 1961-62 edition) are no longer on the Navy List. They belong to the Shipping Board of Gdansk.

OILERS (Ropowiec)

ZOLW (ex-Stutthof)

Displacement: 450 tons. Name changed from Stutthof to Zolw (Turtle) in 1961.

General

Measurement 300 tons deadweight. Krab means Crab and Silmak means Snail. Small tankers built in 1958 at Gdansk. 7 1

Lighters of 300 tons gross with diesels, converted into tankers. There is also the water tanker (wodotankowiec) Plehmindorf of 500 tons displacement.

AUXILIARIES

KABLOWIEC

800 tons gross $130\times15\times5$ feet Measurement: Dimensions:

Cable ship converted from a freighter-bunker ship.

MEDUZA

URAN

Dimensions:

98×15×8 feet Complement:

General Fuel oil and replemishment vessel

Displacement: 254 tons

Speed=8 kts. Machinery:

General
Degaussing vessels of the British MMS 11 type.

PERKUM

Displacement: 800 tons Machinery:

Diesel-electric. 2 shafts. B.H.P.: 3,500=12 kts.

URANIA

General Icebreaker, twin screw, built in 1962 by P.K. Harris & Sons, Appledore, Devon, England.

Administration

Minister of Marine:

Rear-Admiral Fernando Quintanilha Mendonça Dias

Chief of Naval Staff:

Vice-Admiral Armando Julio de Roboredo e Silva

PERO ESCOBAR

PORTUGAL

Naval Attaché in London: Commander Leonel A. G. Cardoso, Po.N.

Naval Attaché in Washington: Commander Vasco Antonis Martino Rodrigues, Po.N.

Personnel

1966: 15,000 (1,400 officers and 13,600 men) including marines

Navy Estimates

1962: Escudos 605,496,335 1963: Escudos 1,056,903,256 1964: Escudos 1,250,324,896

1965: Escudos 1,278,093,329 (actual) 1966: Escudos 1,467,009,572 (estimated)

Mercantile Marine

Lloyd's Register of Shipping: 333 vessels of 697,627 tons gross

Silhouettes

Scale 150 ft.=1 inch.



ALVARES CABRAL, PACHECO PEREIRA. D. FRANCISCO DE ALMEIDA, VASCO DA GAMA



BARTOLOMEU DIAS





CORTE REAL, DIOGO CÃO



NUNO TRISTÃO



DIOGO GOMES



ALFONSO DE ALBUQUERQUE



JOÃO DE LISBOA, PEDRO NUNES

4 New Construction

French "Daphne" Type

Displacement:

869 tons surface, 1,043 tons

Dimensions:

Tubes: Machinery: 869 tons surface, 1,043 tons submerged 190½×22½×15½ feet 12—21·7 inch (8 bow, 4 stern) Diesel-electric. 2 shafts. SEMT-Fielstick diesels, B.H.P.: 1,300=16 kts. surface Electric motors, S.H.P.: 1,600=16 kts. submerged 90 tons 3,000 miles at 7 kts.

Oil fuel:

3,000 miles at 7 kts.
46 (6 officers and 39 men) Radius: Complement:

General

The prefabricated construction of these submarines
was begun on 1 Oct. 1964 at Dubigeon-Normandie
Shipyard, Nantes, France. They are basically similar
to the French "Daphne" type.

3 "Narval" Class

Ex-British "S" Class

Displacement: Dimensions:

715 tons standard, 859 tons surface, 1,008 tons submerged 217 (o.a.) \times 23½ \times 10½ feet 1—4 inch (see Gunnery notes

Guns:

below)
6-21 inch bow (12 torpedoes

Machinery:

Oil fuel:

Radius: Complement: 6—21 inch bow (12 torpedoes carried)
Diesels. B.H.P.: 1,900=14·75 kts. surface
Electric motors. H.P.: 1,300=
9 kts. submerged
87 tons
5,000 miles at 10 kts
46 (5 officers and 41 men)

"S" Class patrol submarines purchased from Great Britain in 1948 Built by Cammell Laird & Co. Ltd., Birkenhead. Designed for offensive operations in con-

Gunnery
The 20 mm. Oerlikon anti-aircraft gun and three
Vickers gas operated machine guns formerly carried
were removed in 1961.

Photographs

A port bow view of Neptuno at speed appears in the 1957-58 to 1962-63 editions.

SUBMARINES (Submersiveis)

BARRACUDA CACHALOTE 164 \$ \$

Builders Dubigeon Dubigeon Dubigeon Dubigeon Laid down 1 Feb. 1965 1 Feb. 1965 Dec. 1965

Launched Combletion

Jan. 1968 Sep. 1968 May 1969

1970



NEPTUNO

1966, Portuguese Navy, Official



NAUTILO

1965, Portuguese Navy, Official



NARVAL

1963, Portuguese Navy, Official

Completed

1944

18 Feb. 14 June 21 Dec.

	Pen. No.	Builders	Laid down	Launched
NARVAL (ex-H.M.S. Spur)	S 160	Cammell Laird	1 Oct. 1943	17 Nov. 1944
NAUTILO (ex-H.M.S. Saga)				11 Mar. 1945
NEPTUNO (ex-H.M.S. Spearhead)	S 162	Cammell Laird	18 Aug. 1943	2 Oct. 1944

Completed

DESTROYER (Contratorpedeiro)

Pennant No.

I "Vouga" Class

1,238 tons standard (1,563 tons Displacement:

Dimensions:

Tubes:

1,238 tons standard (1,563 tons full load)
307 (pp.), 323 (o.a.)×31×11
(mean) feet
2—4.7 inch, 5—40 mm. AA., 3
—20 mm. AA.
4—21 inch (quadrupled)
Rails fitted and 20 mines carried
1 Squid triple-barrelled depth
charge mortar
Parsons geared turbines, S.H.P.:
22,000=30 kts. (approx.)
3 Yarrow Mines: A/S weapons:

Machinery:

Boilers: Oil fuel:

3 Yarrow 345 tons 3,000 miles at 11 kts. 184 (normal) Radius: Complement:

Of Yarrow type. Built at Scotstoun by Yarrow & Co. Ltd., as were the machinery and boilers. Refit during 1946-49 by Yarrow included shortening the after funnel, stepping a new tripod foremast, increase in antiaircraft armament and installation of sonar equipment and radar.

Again refitted in 1957 with modified armament, improved anti-submarine capabilities, and installation of ahead throwing weapons (squid mountings). The side thrown projectors were removed, and only two of the depth charge tracks retained.



Builders

VOUGA

1961. Portuguese Navy, Official

Gunnery
Two of the five 40 mm. AA, guns are in a twin mounting

Engineering
The boilers work at a steam pressure of 400 lb. per sq. in.

Disposals Disposals

The unconverted ship of this class, Douro, was discarded in Dec. 1959. Of the converted ship Däo was discarded on 29 Nov. 1960, Tejo on 9 Feb. 1965, and Lima on 16 Oct. 1965.

Launched

FAST ANTI-SUBMARINE FRIGATE (Fragata) Light Destroyer Type

I "Pero Escobar" Class

1,250 tons standard (1.600 tons Displacement:

full load)

295½ (pp.), 306½ (w.l.), 321½ (o.a.)×35½×10 feet

4—3 inch, 50 cal. d.p. AA. (two twin) as modernised Guns:

twin) as modernised
6 A/S (two triple) as modern-Tubes: ised

A/S weapons:

2 Squid triple-barrelled depth charge mortars Geared turbines, 2 shafts, S.H.P.: Machinery:

Geared turbines, 2 shafts, 5, 24,000=32 kts, 2 Ansaldo-Foster Wheeler 236 tons 2,800 miles at 13.5 kts, 165 (nomal) Boilers: Oil fuel:

Radius: Complement:

General
A "light destroyer" or fast anti-submarine escort vessel build to the order of NATO for the Portuguese

Gunnery

The armament before modernisation comprised two single 3 inch A. guns, two 40 mm, AA. (twin mount), four 20 mm, AA. (two twin mounts) and three 21 inch torpedo tubes.

PERO ESCOBAR

F 335

Builders Navalmeccanica, Castellammare di Stabia, Italy

Launched Laid down 7 Jan. 1955 25 Sep. 1955 Completed

Camplelle



PERO ESCOBAR

No.

A larger starboard broadside view appears in the 1957-58 editions, and another in the 1959-60 and 1960-

1961, Portuguese Navy, Official

Modernisation

Modernisation

Modernised in 1966-67, the alterations including the fitting of new guns, sonar and anti-submarine torpedo tubes similar to those in the "Almirante Pereira da Silva" class frigates (see below).

FAST FRIGATES (Fragatas)

	No.	Builders	Laid down	Launcnea	Completion
COMMANDANTE HERMENEGILDO CAPELO	F 481	At et Ch. de Nantes	1 Dec. 1965		1 Aug. 1968
COMMANDANTE JOÃO BELO	F 480	At et Ch. de Nantes	I Apr. 1965	23 Mar. 1966	1 Dec. 1967
COMMANDANTE ROBERTO IVENS	F 482	At et Ch. de Nantes	1 Aug. 1966	_	1 Apr. 1969
COMMANDANTE SACADURA CABRAL	F 483	At et Ch. de Nantes	1 Apr. 1967	_	1 Dec. 1969
		*			

4 New Construction French "Commandant Riviere" Type

1,650 tons standard (2,180 tons Displacement:

full load)
321 $\frac{1}{2}$ (pp.) 338 (o.a.)×37 $\frac{1}{4}$ ×12 $\frac{1}{2}$ (mean) feet Dimensions:

3-3-9 AA. (single); Guris: inch Tubes: A/S weapons: Machinery;

Builders

3—3.9 inch AA. (single); 2—40 mm. AA. 6—21.7 inch ASM (2 triple) 1—12 inch quadruple ASM SEMT-Pielstick diesels. 2 shafts B.H.P.: 16,200=25 kts. (26.5 kts. max.)

Radius: Complement: 4,500 miles at 15 kts. 214

Laurantin d

General General
The prefabricated construction of these ships was begun on 1 Oct. 1964 at the Ateliers et Chantiers de Nantes, France. They are similar to the French type exept the 30 mm. AA. guns which will be replaced by 40 mm. AA. guns.

ALMIRANTE GAGO COUTINHO ALMIRANTE MAGALHAES CORREIA ALMIRANTE PEREIRA DA SILVA

F 473 F 474 F 472 Estaleiros Navais Lisnave, Lisbon Estaleiros Navais de Viana do Castelo Estaleiros Navais Lisnave, Lisbon Laid down 2 Dec. 1963 30 Aug. 26 Apr. 2 Dec. 14 June 1962

Completion 1 Aug. 1967 1 Dec. 1967 1 Dec. 1966 Launched 1965 1965

3 New Construction

1,450 tons standard (1,950 tons Displacement: full load) 314×37×14 (max.) feet Dimensions: 4—3 inch, 50 cal., d.p. AA. (2 twin)

2 four-barrelled Bofors rocket-A/S weapons: 2 four-barrelled Botors rocket-launchers, 2 D.C. throwers 6 A/S (two triple) De Laval geared turbine. 1 shaft S.H.P.: 20,000=25 kts.

Machinery: Boilers: Oil fuel:

400 tons Radius 4,500 miles at 15 kts, 176 Complement:

The prefabricated construction of two of these U.S. The prefabricated construction of two of these U.S. "Dealey" type escort ships was begun in 1961 at Lisnave Shipyard (formerly Navalis Shipyard, Lisbon, and the prefabricated construction of a third was begun in 1962 at Estaleiros Navalis de Viana do Castelo.



ALMIRANTE PEREIRA DA SILVA

CORTE REAL (ex-U.S.S. McCoy Reynolds, DE 440) DIOGO CÃO (ex-U.S.S. Formoe, DE 509)

2 "Diogo Cao" Class

Ex-U.S. "John C. Butler" Class

Destroyer Escort Type

Displacement:

1,350 tons standard (2,100 tons

Dimensions:

1,350 tons standard (2,100 tons full load)
306 (o.a.)×363×14 (max.) feet
2—5 inch, 38 cal.; 10—40 mm.
AA. (3 twin mounts. 1 quadruple

Guns:

A/S weapons:

hedgehog, 8 D.C.T., 2 D.C.

Machinery:

tracks Geared turbines, 2 shafts, S.H.P.:

Boilers:

12,000-24 kts.

Oil fuel: 340 tons

Radius: Complement:

4,000 miles at 12 kts 200 (11 officers and 198 men)

General

General Formerly in the United States Navy, these destroyer escorts or escort ships of the "John C. Butler" class were received from the U.S.A. under special agreement and transferred to the Portuguese Navy at San Francisco, California, on 7 Feb. 1957 and renamed after Portuguese navigators.

Torpedo Tubes
The original Three 21 inch torpedo tubes in these ships were removed.

Nomenclature

Nomenclature

On transfer these ships were originally to have been renamed by the Portuguese Zambeze and Zalre, after rivers in Portuguese Africa, but the names were changed to those of Portuguese navigators as above.

Photographs
A port bow oblique aerial view of Diogo Cão appears in the 1958-59 edition, a starboard quarter oblique aerial view of Corte Real in the 1959-60 to 1965-66 edition and a port mear broadside surface view of Diogo Cão in the 1961-62 to 1965-66 editions tion's

Fast Frigates—contd.

Pennant No. F 334

F 333

Builders
Federal S.B. & D.D
Co., Port Newark
Federal S.B. & D.D
Co., Port Newark

Launched 22 Feb. 1944

Completed 2 May 1944

2 Apr. 1944

5 Oct. 1944



DIOGO CÃO

1966, Portuguese Navy, Official



CORTE REAL

1966, Portuguese Navy, Official

1945

1944

Launched

3 Mar. 1 Nov.

Completed 20 Sep. 1945 22 Feb. 1949 10 July 1945 11 Apr. 1949

FRIGATES (Fragatas)

ALVARES CABRAL (ex-H.M.S. Burghead Bdy)
D. FRANCISCO DE ALMEIDA (ex-H.M.S. Morecambe
PACHECO PEREIRA (ex-H.M.S. Bigbury Bdy)
VASCO DA GAMA (ex-H.M.S. Mounts Bdy)

No.	Builders		Laid down	
F 336	Charles Hill & Sons Ltd., Bristol		21 Sep. 1944	
F 479	Wm. Pickersgill Ltd., Sunderland	T	30 Apr. 1944	
F 337	Hall Russell & Co. Ltd., Aberdeen		30 May 1944	
F 478	Wm. Pickersgill Ltd., Sunderland	W	23 Oct. 1944	

4 "Alvares Cabral" Class Ex-British "Bay" Class

Displacement:

Dimensions:

1,600 tons standard (2,850 tons full load)
268 (pb.), 307½ (o.a.)×38½×
12½ feet (15½ feet max.)
4—4 inch, 6—40 mm. AA. (2

Guns:

twin) twin)
1 Hedgehog, 4 D.C. throwers 2
D.C. tracks
Triple expansion. 2 shafts.
H.P.: 5,500=19-5 kts.
2 Admiralty 3-drum type
680 tpus

A/S weapons: Machinery:

Boilers:

680 tons 7,500 miles at 10 kts.

Oil fuel: Radius: Complement:

168 (normal)

General

Former British frigates of the "Bay" class, designed primarily for anti-aircraft escore duties.

Alvares Cabral and Pacheco Pereira were purchased from Great Britain in Apr. 1959 and officially transferred to the Portuguese Navy at Plymouth on 11 May 1959.

D. Francisco de Almeida and Vasco da Gama were purchased from Great Britain in May 1961 and modernised before delivery by John I. Thornycroft & Co. Ltd., Woolston, Southampton, where they were commissioned in the Portuguese Navy on 3 Aug. 1961.

Photographs

A photograph of D Francisco de Almeida appears in the 1963-64 to 1965-66 editions.

Construction
T=Completed by John I, Thornycroft & Co. Ltd.,
Woolston, Southampton.
W=Completed by J. Samuel White & Co. Ltd.,
Cowes, Isle of Wight



ALVARES CABRAL

1966, Portuguese Navy, Official



PACHECO PEREIRA

1964, Pertuguese Navy, Official

DIOGO GOMES (ex-H.M.S. Awe)

Pennant No

F 331

F 332 NUNO TRISTÃO (ex-H.M.S. Avon)

2 "Diogo Gomes" Class Ex-British "River" Class

Displacement:

Guns: A/S weapons: 1.460 tons standard, 1,865 tons normal (2,450 tons full load)
283 (pp.), 301\(\frac{1}{2}\) (0.a.)\times 36\(\frac{1}{2}\) \times 15 max.)\freet
2-4 inch, 6-40 mm. AA.
2 Squid triple-barrelled depth charge mortars, 2 depth charge tracks (see Anti-Submarine potes)

Machinery:

tracks (see Anti-Sub notes)
Triple expansion. 2
1.H.P.: 5,500=18 kts.
2 Admiralty 3-drum type
600 tons
7,000 miles at 10 kts.
175 (normal) 2 shafts.

Boilers: Oil fuel: Radius: Complement:

General

Former British frigates of the "River" class. Pur-chased from Great Britain in 1948 and transferred to Portugal in May 1949. The originally designed standard displacement was 1,370 tons. "River" class. Pur-

Anti-Submarine
Refitted in 1959 when the anti-submarine capabilities were improved by the installation of two squid tripleFrigates—contd.

Builders Fleming & Ferguson Ltd., Paisley Charles Hill & Sons Laid down 27 May 1 1943

8 Jan. 1943

Launched 28 Dec. 1943 19 June

1943

Completed 1944 21 Apr. 18 Sep. 1943



NUNO TRISTÃO (Squid in "B" position)

1966, Portuguese Navy, Official

barrelled depth charge mortars, the four side thrown depth charge projectors were removed and only two depth charge racks were retained.

Photographs rnotograpns
A port bow view of Diogo Gomes appears in the 1958-59 to 1960-61 editions.

I "Bartolomeu Dias" Class

(Rated as Aviso de Primeira Classe)

Displacement: Dimensions:

Guns:

1,788 tons standard (2,439 tons

A/S weapons:

1.788 tons standard (2,439 tons full load)
326½×44½×12½ feet (mean)
4—4.7 inch, 50 cal., 2—3 inch
AA., 8—20 mm. AA.
4 D.C. throwers, 2 D.C. tracks
Capacity 40
Parsons geared turbines. S.H.P.:
8,000=21 kts.
2 Yarrow
580 tons

Machinery:

Boilers: Oil fuel: Radius: Complement:

580 tons

10,000 miles at 10 kts. 184 (normal)

General The original contract for this ship was placed with The original contract for this ship was placed with Odero-Terni-Orlando in 1931, but cancelled in 1932, and the design was modified by the new builders when a fresh contract was made. The ship made 22 kts. on trials without being pressed. Bartolomeu Dlas no longer has a white band around her funnel since she has pennant number painted on bows. Designed for overseas service. Fitted to carry 40 mines.

Sister ship Afonso de Albuquerque was lost in action on 18 Dec. 1961 during the Indian invasion of Goa.

BARTOLOMEU DIAS

Pennant No. F 471

Builders Laid do R. & W. Hawthorn Leslie & 24 May Co., Ltd., Hebburn-on-Tyne Completed Laid down Launched 1933 10 Oct. 1934 May 1935



BARTOLOMEU DIAS

1964,, Captain C.A. Texeira da Silva, Commanding Officer

Disposals

Of the two frigates of the "Goncalo Velho" class, rated as Second Class Sloops (Avisos de Segundo Classe)

Goncalves Zarco was officially discarded on 4 Nov.
1964, and Goncalo Velho was scrapped on 19 June 1961.

(The frigate João de Lisboa, formerly rated as a Second Class Sloop (Aviso de Segunda Classe), was converted in 1961 into a Survey Ship. Navio Hidrografico, like her sister ship Pedro Nunes, see next page).

I Ex-British "Bangor" Class Fleet Minesweeper

CACHEU (ex-Comandate Almeida Carvalho, ex-Fort

York, ex-Mingon) tons standard (900 tons

Displacement: 672

Dimensions:

672 tons standard (900 tons full load)
171½ (pp.). 180 (o.a.)×28½
×9½ (max.) feet
1—3 inch, 2—20 mm. AA.
Triple expansion, 2 shafts.
1.H.P.: 2,400=16 kts.
2, of 3-drum small-tube type Guns.

2, of 160 tons Boilers-

Oil fuel: Complement:

General

Former British fleet minesweeper of the "Bangor" Former British fleet minesweeper of the "Bangor" class, steam type. Originally a sister ship of Almirante Lacerda, see next page. Launched in Canada on 24 Aug.. 1941. Purchased from Great Britain in 1950. Served as a survey ship until 1965 when she was converted into a corvette and her name and pennant number changed from Comandante Almeida Carvalho, A 527, to Cacheu, F 470.

CORVETTE



CACHU

1966, Portuguese Navy, Official

(Navios Hidrograficos) SURVEY SHIPS

I Ex-British "Dampier" Class ALFONSO DE ALBUQUERQUE (ex-H.M.S. Dalrymple, ex-Luce Bay, ex-Loch Glass)

1.600 tons standard (2,230 tons Dimensions:

Displacement:

Machinery:

1,600 tons standard (2,250 tons full load)
286 (pp.), 307 (o.a.)×38½×
14½ (max.) feet
4—3 pdrs (and 2 D.C.T.)
2 4-cylinder triple expansion.
2 shafts. 1.H.P.: 5,500=19·5 kts.
3 Admirates 3.4ctium type

Boilers: Oil fuel:

2 shafts. 1.H.P.: 5,500=19.5 kts 2 Admiralty 3-drum type 580 tons 10,000 miles at 10 kts 149 (14 officers, 135 ratings) Radius: Complement:

Complement:
General
Modified frigate of the "Bay" class. Built by Wm.
Pickersgill & Sons Ltd., Sunderland, but completed
at H.M. Dockyard, Devonport. Laid down on 29 Apr.
1944, launched on 12 Apr. 1945, and completed on
10 Feb. 1949. Equipped with radar and sonar Purchased by Portugal from Great Britain in Apr. 1966.
Pennant No. A 526.
The main machinery was manufactured by George



ALFONSO DE ALBUQUERQUE

Clark Ltd., Sunderland.
Power at 220 volts D.C., is from two 120 kw.

1966, Dr. Giorgio Arra

steam-turbine generators and two 150 kw. diesel gen-

Survey Ships-contd.

2 "Pedro Nunes" Class (Ex-Sloops)

IOÃO DE LISBOA (ex-Infante D. Henrique)

PEDRO NUNES

João de Lisboa: 1,109 tons standard (1,218 tons full Displacement:

load)

Pedro Nunes: 1,090 tons standard (1,197 tons full load) Dimensions:

Pedro Nunes: 1,090 tons standard (1,197 tons full load) João De Lisboa. 234½ (pp.),×332½×9½ feet Pedro Nunes: 223 (pp.),×32½×9½ feet 1—4-7 inch. 50 cal.; 4—20 mm. AA. (see Gunnery notes below) 2 sets MAN 8 cyl. diesels. B.H.P.: 2,400=16·5 kts. 110 tons normal, 126 tons max. 6,000 miles at 13 kts. João de Lisboa: 74, Pedro Nunes: 52

Gune

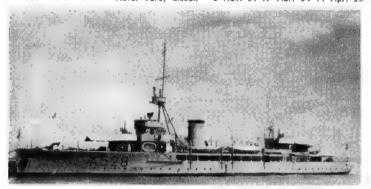
Machinery:

Oil fuel: Radius: Complement:

Unlike João de Lisboa, her sister ship, Pedro Nunes was not part of the ten-year programme introduced in 1930. Formerly rated as second class sloops (avios de segundo classe) but Pedro Nunes was converted into a survey ship in 1956, and João de Lisboa in Mar. 1961.

The forward 4-7 inch gun was removed from Pedro Nunes in 1956, and the forward 4.7 inch gun and the four depth charge throwers were removed from Jodo de Lisboa in Mar. 1961 when she was converted into a survey ship.

Pennant
No. Name Builders Laid down Launched Completed
A 5200 joão de Lisboa Naval Yard, Lisbon 18 Apr. 34 21 May 36 1 Aug. 37
A 528 Pedro Nunes Naval Yard, Lisbon 5 Nov. 31 17 Mar. 34 11 Apr. 35



PEDRO NUNES

courtesy Eugenio A. Cavalheiro



IOÃO DE LISBOA

1965, Portuguese Navy, Official

I Ex-British "Flower" Class Frigate

CARVALHO ARAUJO (ex-Terje Ten, ex-Commandant Drogou, ex-Chrysanthemum)

Displacement: Guns: Boilers:

1,020 tons standard (1,340 tons full load)
190 (pp.), 205 (o.a.)×33×16½ feet
1—3 inch, 4—20 mm. AA.
Triple expansion. I.H.P.: 2,750=16 kts

2 cylindrical 288 tons

288 tons 48 (7 officers and 41 men)

Complement: General

General
Former British corvette (later re-rated as a frigate) of the "Flower" class. Built by Harland & Wolff Ltd., Belfast. Laid down on 17 Dec. 1940. launched on 11 Apr. 1941, and completed on 26 Jan. 1942. Served in the French Navy during the Second World War. Sold out of the service after hostilities. Purchased by Portugal, from the Hector Whaling Company, at Capetown, in Mar. 1959, and later equipped as a survey ship for the Portuguese Navy to replace the former Carvalho Araújo (ex-British "Flower" class minesweeping sloop Jonquil) which was discarded in 1959. Pennant No.: A 524.



CARVALHO ARUJO

1961, Portuguese Navy, Official

Survey Ships-contd.

I Ex-British "Bangor" Class Fleet Minesweeper

ALMIRANTE LACERDA (ex-Caraquet)

Guns:

Machinery:

x-Laraquet)
672 tons standard (900 tons full load)
171\frac{1}{2} \left(pp_1), 180 \((0.a.) \times 28\frac{1}{2} \times 9\frac{1}{2} \times (max.)\) feet
1-3 inch, 2-20 mm. AA.
Triple expansion. 2 shafts. I.H.P.: 2,400=16 kts.
2, of 3-drum small-tube type
160 tons
49 Displacement: Dimensions:

Boilers:
Oil fuel:
Complement:

General

Former British fleet minesweeper of the "Bangor" class, steam type. Built in Canada, launched on 2 June 1941, and purchased from Great Britain in 1946. Pennant No. A 525.



ALMIRANTE LACERDA

1966. Portuguase Navy, Official

I Ex-British "Isles" Class Minesweeping Trawler

SALVADOR CORREIA (ex-Baidaque da Silva, ex-Ruskholm)

560 tons standard (740 tons full load) 152×27†×15 feet 2—20 mm, AA., D.C. carried Triple expansion. I.H.P.: 850=12 kts. 54 (4 officers and 50 men) Displacement:

Dimensions: Guns

Complement:

General

General Former minesweeping trawler. Built by Goole Shipbuilding & Repairing Co. Ltd. Laid down on 14 Aug. 1941, launched on 4 Feb. 1942, and completed on 12 May 1942. Purchased from Great Brtain in 1949. Formerly rated as a patrol vessel (Navio Patrulha) and later as a minesweeper (caço-minas). The 3 inch gun was removed in 1964. On 28 Sep. 1961 Baldaque da Silva exchanged her name with Salvador Correia (ex-Saltarels) which had been discarded on 12 May 1961.



SALVADOR CORREIA

1964, Portuguese Navy, Official

OCEAN MINESWEEPERS (Draga-minas oceânicos)

4 "S. Jorge" Class

CORVO (ex-U.S.S. MSO 487) GRACIOSA (ex-U.S.S. MSO 486) Displacement:

PICO (ex-U.S.S. MSO 479)
S. JORGE (ex-U.S.S. MSO 478)

Dimensions:

665 tons standard (750 tons full load)
165 (pp.), 172 (o.a.)×35×10 (mean) feet
1—40 mm. AA.
2 G.M. diesels 2 shafts. B.H.P.: 1,600=13.5 kts. (max.) Guns: Machinery: Oil fuel: Radius:

46 tons 3,800 miles at 10 kts. (economical speed)

Complement:

General
"MSO 421" class ocean minesweepers built in the U.S.A. under the Mutual
Defence Assistance Programme by Burger Boat Co., Maniowoc, Wisconsin and
Bellingham Shipyard Co. Constructed of wooden and non-magnetic materials

Photographs
Photographs of S. Jorge appears in the 1956-57 to 1960-61 editions.
Engineering
The diesels of non-magnetic stainless steel alloy, are model 8-278A, two stroke cycle, non-reversible, 8-cylinder V engines. Controllable pitch propellers are fitted.
No. Name Builders Laid down I sunched

 No.
 Name
 Builders
 Lald down
 Launcned
 Completed

 M 418
 Corvo
 Burger Boat Co.
 18 Aug. 1953
 28 July 1954
 23 Nov. 1955

 M 417
 Graciosa
 Burger Boat Co.
 16 May 1953
 19 Nov. 1953
 15 Aug. 1955

 M 416
 Pico
 Bellingham S.Y.
 Co. 1 Oct. 1953
 18 June 1954
 1 June 1955

 M 415
 S. Jorge
 Bellingham S.Y.
 Co. 26 Aug. 1953
 30 Apr. 1954
 24 Apr. 1955



CORVO

1961, Portuguese Navy, Official

PATROL VESSELS (Patrulhas)

5 Portuguese Built "Maio" Class

BOAVISTA FOGO BRAVA SANTO ANTÃO 366 tons standard (400 tons full load) 170 (pp.), 173½ (o.a.)×23×10 (mean) feet 2—40 mm. AA., 2—20 mm. AA. 1 Hedgehog. 4 D.C.T. 2 depth charge tracks 4 SEMT-Pielstick diesels (4-stroke, 14 cylinder V). 2 shafts. B.H.P.: 3,500=19 kts. 45 tons Displacement: Dimensions: Guns: A/S weapons: Machinery: Oil fuel: Radius: Complement: 3,900 miles at 12 kts.

General

General

Built in Portugal under the U.S. off-shore procurement programme. Of all-welded construction. A photograph of Brava appears in the 1958-59 to 1962-63 editions.

Pei	1. No	. Name	Builders	Launched	Completes
		Boavista	Estaleiros Navais do Mondego	10 July	56 17 May 5/
P	590	Brava	Estaleiros Navais de Viana do	Castelo 2 May	56 27 Dec. 56
P	591	Fogo	Estaleiros Navais de Viana do	Castelo 2 May	56 11 Apr. 57
P	594	Santa Luzia	Arsenal do Alfeite	17 Jan.	57 24 Oct. 58
P	593	Santo Antão	Arsenal do Alfeite	8 June	56 30 Dec. 5/



SANTO ANTÃO

1963, Portuguese Navy, Official

3 French Built "Majo" Class

MAIO (ex-Funchal, ex-P 4) PORTO SANTO (ex-P 5) S. NICOLAU (ex-P 8)

366 tons standard (400 tons full load)
170 (pp.), 173\{\frac{1}{2}\} (o.a.)\times 23\times 10 feet
2—40 mm. AA., 2—20 mm. AA.
1 Hedgehog. 4 D.C.T. 2 depth charge tracks
4 SEMT-Pielstick, 2 shafts. B,H.P.: 3,240=17.5 kts.
4,000 miles at 10 kts. Displacement: Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Radius: Radius: Complement:

General
Of PC design, but built in France as a U.S offshore procurement order under the Mutual Defence Assistance Programme. Fitted with two mine rails.

Pennant No. Name		Builders	Launched		
P 587	Maio	Dubigeon, Nantes	27 Sep. 1954		
P 588	Porto Santo	Normand (Le Havre)	9 Feb. 1955		
P 589	S. Nicolau	Normand (Le Havre)	7 June 1955		



S. NICOLAU

1961, Portuguese Navy, Official

6 "Principe" Class.

581 PRINCIPE (ex-Flores, ex-PC 812) 582 MADEIRA (ex-PC 811) 584 SAL (ex-PC 809) P 583 SANTIAGO (ex-PC 1257) P 585 S. TOMÉ (ex-PC 1256) P 586 S. VICENTE (ex-PC 1259)

318 tons standard (357 tons full load)
170 (w.l.), 173\(\frac{2}{3}\) (o.a.)\(\circ 2.3\) 23\(\circ 11\) (max.) feet
1—40 mm, AA., 3—20 mm. AA.
1 Hedgehog. 4 D.C.T. 2 depth charge tracks
2 Hamilton diesels. 2 shafts B.H.P.: 3,500=19 kts. Displacement: Dimensions: Guns: A/S weapons: Machinery: Complement:

Submarine chasers of the PC type purchased from U.S.A. in 1948. Named after Portuguese Atlantic Islands. For patrol and Air/Sea Rescue duties in the Azores, Madeira, and off the Portuguese coast. The armament was modified in 1957, antisubmarine weapons being added and the 3 inch guns and two 20 mm, guns being removed. A photograph of Santiago appears in the 1955-56 to 1959-60 editions, and of Sal in the 1960-61 to 1965-66 editions.



MADEIRA 1966, Portuguese Navy, Official

COASTAL MINESWEEPERS (Draga-Minas Costeiros

4 "S. Roque" Class (British "Ton" Type) RIBEIRA GRANDE ROSARIO

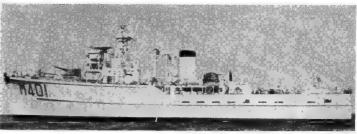
S. ROQUE

Displacement: 360 tons standard (425 tons full load) Dimensions: 140 (ρ .), 152 (o.a.)×28 $\frac{1}{4}$ ×7 feet 1—40 mm. AA., 2—20 mm. AA. (twin Achinery: 2 Mirrlees diesels. 2 shafts B.H.P.: 1,2: 47 mount) 1.250=15 kts

LAGOA

Similar to the British "Ton" class of coastal minesweepers, but built in Portugal. All laid down at C.U.F. Shipyard, Lisbon, on 7 Sep. 1954, under the OSP-MAP. Lagoa and S. Roque were financed by U.S.A., and the other two by Portugal. A photograph of Lagoa appears in the 1958-59 to 1960-61 ediions and of Ribeira Grande in the 1961-62 to 1965-66 editions.

Pennant No.	Name	Launched	Completed
M 403	Lagoa	15 Sep. 1955	10 Aug. 1956
M 402	Ribeira Grande	14 Oct. 1955	8 Feb. 1957
M 404	Rosario	29 Nov. 1955	8 Feb. 1956
M 401	S. Roque	15 Sep. 1955	4 June 1956



S. ROQUE

1966, Portuguese Navy, Official

8 "Ponta Delgada" Class

ANGRA DO HEROISMO (ex-U.S.S. AMS 62)SANTA CRUZ (ex-U.S.S. AMS 92)
HORTA (ex-U.S.S. AMS 61)
S. PEDRO (ex-U.S.S. AMS 147)
LAJES (ex-U.S.S. AMS 146)
YELAS (ex-U.S.S. AMS 145)
PONTA DELGADA (ex-Adjutant, AMS 60) YILA DO PORTO (ex-U.S.S. AMS 91)

375 tons standard (405 tons full load)
138 (pp.), 144 (o.a.)×27×8 feet
2—20 mm. AA. (twin mount)
G.M. diesels, B.H.P.: 900=14 kts. Displacement: Dimensions: Guns: Machinery: Complement:

Complement: 40

General

Of wooden and non-magnetic construction. Ponta Delgada was transferred from the U.S. on 7 Apr. 1953. Four more were delivered in 1953-54 and the remaining three in 1955 A photograph of Horta appears in the 1957-58 to 1960-61 editions and of S Pedro in the 1961-62 to 1965-66 editions.

Pennans Nos.: M 407 (Angra do Heroismo), M 406 (Horta), M 405 (Ponta Delgada), M 409 (Santa Cruz), M 408 (Villa do Poto), M 410 (Velas) M 411 (Lejes), M 412 (S. Pedro).



SANTA CRUZ

1966, Portuguese Navy, Official

FISHERY PROTECTION LAUNCHES

5 "Azevia" Class (Lanchas de Fiscalização da Pesca)

AZEVIA BICUDA CORVINA ESPADILHA CORVINA DOURADA ESPADILHA 230 tons (270 tons full load) 134 $\frac{1}{2}$ (pp.), 139 $\frac{1}{4}$ (o.a.) \times 21 $\frac{1}{2}\times$ 7 feet 2—20 mm. AA. 2 sets 7-cyl. 2-stroke Sulzer diesels in all except first pair, which have 2 sets 10-cyl. 4-stroke MAN diesels. 2 shafts. B.H.P.: 2,400=17 kts. 25 tons 3,700 miles at 11 kts., 850 miles at 17 kts. 37 DOURADA Displacement: Dimensions: Guns: Machinery: Oil fuel: Radius: Complement:

All launched in 1941-42. Pennant numbers: Azevia P 595, Bicuda P 596, Corvina P 597. Dourada P 598, Espadilha, P 599. A photograph of Bicuda appears in the 1953-54 to 1959-60 editions.

Of the five rescue motor launches (lanchas de socorro) of the Ex-British type, Canopus and Espiga, were discarded in Sep. and Nov. 1959, respectively, Deneb and Formalhaut in 1959 and Altair in 1955.



AZEVIA

1960, Portuguese Navy, Official

ATROL LAUNCHES (Lanchas de Fiscalização)

10 "Argos" Class

ARGOS P 372 DRAGÃO P 374 HIDRA P 376 CASSIOPEIA F 373 ESCORPIÃO P 375 LIRA P 361 CENTAURO P 1130 ORION P 362 PEGASO P 379 SAGITARIO P 1134

Displacement:
Dimensions:
Guns:
Machinery:
Oil fuel:
Complement: 180 tons standard (210 tons full load)
131½ (pp.), 136½ (o.a.)×20½×7 feet
2—40 mm. AA.
2 Maybach diesels. B.H.P.: 1,200=17 kts.
16 tons
24

General Six built by Arsenal do Alfeite, Lisbon, and four by Estaleiros Navais de Viana do Castelo. Argos commissioned 14 June 1963, Cassiopela 13 Jan. 1964, Dragão 23 July 1963, Escorpião 3 Sep. 1963, Hidra 11 Apr. 1964, Pegaso 16 Oct. 1963, Orlon 24 Oct. 1964, Lira 19 June 1964, Centauro 23 Apr. 1965, Sagitarlo 4 Sep. 1965. Named after constellations.



DRAGÃO

1964. Portuguase Navy, Official

6 "Jupiter" Class

MERCURIO P 1135 SATURNO P 1136 JUPITER P 1132 MARTE P 1134 URANO P 1137 VENUS P 1133 32 tons full load 69 (o.a.)×16½×4½ feet 1—20 mm. Oerlikon AA. 2 cummins diesels. B.H.P.: 1,270=20 kts. Displacement: Dimensions: Guns: Machinery:

Complement:

enerai Built during 1964-65, Jupiter commissioned 10 Mar. 1965, Venus 14 May 165, Mercurio 18 May 1965, Marte 9 June 1965, Saturno 29 July 1965, Urano 1965 12 Aug. 1965.

8 "Bellatrix" Class FOMALHAUT P 367 POLLUX P 368 RIGEL P 378 ALTAIR P 377 BELLATRIX P 363 CANOPUS P 364 DENEB P 365 ESPIGA P 366 23 tons light (29 tons full load)
62\(\frac{1}{2}\) (w.l.), 68 (o.a.)×15\(\frac{1}{2}\)×4 feet
1—20 mm, Oerlikon AA
2 Cummins diesels. B.H.P.: 470=15 kts.
7 Displacement: Dimensions: Guns: Machinery: Complement:

General Built in Germany by Beyerische Schiffbaugesellschaft. Commissioned om 13 Jan. 1962, 29 May 1961, 29 May 1961, 15 June 1961, 4 Aug. 1961, 4 Aug. 1961, 4 Aug. 1961, 23 Aug. 1961 and 13 Jan. 1962, respectively. Radius 650 miles.



BELLATRIX

1962, Portuguese Navy, Official

ALGOL P 1138

24 tons $50\frac{1}{2}\times13\frac{1}{2}\times2\frac{1}{2} \text{ feet}$ 2 M.G. 2 Cummins diesels. B.H.P.: 244 Displacement: Dimensions: Guns: Machinery:

Built by Argibay, Lisbon in 1964.

CASTOR P 580

Displacement: 53 $\frac{1}{3}$ (w.l.), 58 (o.a.)×13 $\frac{1}{32}$ ×3 $\frac{1}{3}$ feet 1—20 mm, Oerlikon AA Cummins diesels, B.H.P.: 500=15 kts. Dimensions: Guns: Machinery: Complement:

General

Built at the Estaleiros Navais do Mondego and commissioned on 3 Feb. 1964.

RIO MINHO P 370
Displacement:
Dimensions:
Guns:
Machinery:
Complement: 13.5 tons $49\frac{1}{2}\times10\frac{1}{2}\times2\frac{1}{3}$ feet 2 M.G. 2 Alfa Romeo engines. B.H.P.: 130=9 kts.

Built at Arsenal do Alfeite in 1955-57 for the River Minho on Spanish border,

TETE P

371 Displacement: Dimensions: Guns:

100 tons
76;\(\cdot \cdot 2\)\(\cdot 2\)\(\cdot 2\) feet
2—47 mm., 2 M.G.
5tern-wheel propulsion. H.P: 70=8 kts.

Machinery: General Boilers: 1 Yarrow

Built by Yarrow & Co. Ltd., Scotstoun, Glasgow, Launched in 1918. Re-launched at Chimde in 1920. Employed on Zambesi River, Formerly rated as a river gunboat (lancha canhonelra) but re-rated as a patrol boat (lancha de fiscal/zação) in 1960.

Patrol Launches-contd.

2 "Antares" Class

REGULUS P 369

ANTARES P 360 Displacement:
Dimensions:
Guns:
Machinery:
Radius:
Complement:

10 tons 56 (o.a.). 51½ (w.l.)×15½×4 (aft) feet 1—20 mm. Oerlikon quick firing AA. 2 Cummins diesels. 2 shafts. B.H.P.: 460=18½ kts. 600 miles at full power

General

Antares, Sirius and Vega were built in 1959 by James Taylor (Shipbuilders) Ltd., Shoreham, Sussex, England, and commissioned in that year. Hull of Deborine resinglass fibre moulding. Regulus was built in Portugal by Navalis Shipyard, the hull being imported from England. She was commissioned on 27 Jan. 1962.

Of this class, Sirius and Vega were lost in action in Dec. 1961 during the Indian invasion of Goa.



ANTARES

1966, Portuguese Navy, Official

MINESWEEPERS (Caça-Minas)

2 Ex-British "Isles" Class Minesweeping Trawlers

FAIAL (ex-Mangrove)

SANTA MARIA (ex-P 4, ex-Whalsay)

560 tons standard (770 tons full load) $152\times27\frac{1}{2}\times15$ feet 1.—3 inch, 2.—20 mm. AA D.C. carrie-Triple expansion, I.H.P.: $850\!=\!12$ kts. 52 (3 officers and 49 men) Displacement; Dimensions: D.C. carried Guns: Machinery: Complement:

General

General
Minesweeping trawlers purchased from Great Britain in 1945 and 1947, and named after islands in the Azores, Originally classified as patrol vessels but later rated as mineweepers. Of four sister ships S. Miguel (ex-Brurey) was discarded in 1956, Terceira (ex-Haling) in 1957, Salvador Correia (ex-Saltarele) in 1961. Baldaque da Silva (ex-Ruskholm) changed her mame to Salvador Correla and was reclassified as a survey ship. A port bow view of Faial appears in the 1961-62 to 1965-66 editions.

No. Name Builders Laid down Launched Completed M 391 Faial Ferguson Bros. Ltd. 18 Aug. 39 15 Feb. 40 23 Apr. 40 M 392 Santa Maria Cook, Welton & Gemmell 19 Dec. 41 4 Apr. 42 4 Sep. 42



SANTA MARIA

1966. Portuguese Navy, Official

AUXILIARY GUNBOAT (Canhoneira)

DIO A 5205

DIO

Displacement: Dimensions: Guns: Machinery: Boilers: Coal: Radius:

397 tons standard (492 tons full load) $1474\times27\frac{1}{2}\times7$ feet 2—3 inch, 40 cal. (Armstrong), 2—47 mm. Triple expansion. 2 shafts. H.P.: 700=13 kts. Yarrow 85 tons 3.200 miles at 9 kts. 67

omplement: eneral

Built at Lisbon Dockyard. Launched in Oct. 1929. Employed as a training ship

r naval reservists and ancillary forces, and classed as an auxiliary. for naval



1964, Portuguese Navy, Official

DIVING TENDER (Navio-apoio de mergulhadores)

MEDUSA (ex-U.S.S. Portunus, ARC 1, ex-U.S.S. LSM 275, ex-LCT (7) 1773)

Displacement: Dimensions: Machinery:

743 tons standard (1,220 tons full load) 196 $\frac{1}{2}$ (pp.), $221\frac{1}{2}$ (o.a.) \times 34 $\frac{1}{2}$ \times 10 $\frac{1}{2}$ feet G.M. direct drive diesels. 2 shafts, B.H.P.:2,800=12 kts, 5.240 miles at 10 kts, 44

Complement: General

General
Former U.S. medium landing ship of the LSM type. Built by Federal Shipbuilding and Drydock Co., Newark, New Jersey. Laid down on 1 Aug. 1944, launched on 11 Sep. 1944, and completed on 6 Oct, 1944. Converted to a cable repairing or laying ship by the U.S. Navy in 1952. Transferred to the Portuguese Navy under the Military Assistance Programme in 1959. Delivered to Portugal on 16 Nov. and commissioned on 18 Nov. Pennant No.: A 5214.



MEDUSA

1960, Portuguese Navy, Official

LDM 204

LANDING CRAFT (Lanchas de desembarque)

4 LDG

ALFANGE

ARIETE

CIMITARRA

MONTANTE

LDM 205

Displacement: Dimensions:

500 tons Length: 187 feet 2 diesels. B.H.P.: 1,000

General Machinery: Landing craft similar to the LCT (4) type built at the Estaleiros Navais do Mondego and commissioned during 1965.

8 LDM 400 Class LDM 401 LDM 402 LDM 403 LDM 404 LDM 405 LDM 406 LDM 407 LDM 408 13 LDM 300 Class

LDM 309 LDM 310 LDM 305 LDM 307 LDM 306 LDM 308 LDM 303 LDM 304 LDM 311 **LDM 313** LDM 312

5 LDM 200 Class

LDM 201

LDM 203

LDM 202 Displacement:

Dimensions: Machinery:

50 tons full load Length: 50 feet 2 diesels. B.H.P.: 450

26 LCM type landing craft were commissioned in 1964 and 1965 setting up tree classes in LDM 200, 300, and 400 series as above. All built at the three classes in LDM 200, 38 Estaleiros Navais do Mondego.

	4 LDP 300	(ex-LD) Class	
LDP 301	LDP 302	LDP 303	LDP 304
	8 LD	P 200 Class	
LDP 201 LDP 202	LDP 203 LDP 204	LDP 205 LDP 206	LDP 207 LDP 208
	5 LDP 10	00 (ex-LD) Class	
LDP 103	LDP 105 LE	OP 107 LDP 108	LDP 109
Displac	ement: 12 tons ligh	tt (18 tons full load)	

Dimensions: Machinery: General

Length: 46 (o.a.) feet 2 diesels. B.H.P.: 180

General

The nine LD class landing craft (of the LCA type) were redesignated LDP 103, 105, 107, 108 and 109 and LDP 301, 302, 303 and 304. Built at the Estaleiros Navais do Mondego and commissioned on 16 June 1961 (LDP 103), 22 Feb. 1963 (LDP 105), 1964 (LDP 107, 108, 109, 301, 302, 303, 304). The eight LDP 200 class were commissioned in 1965 and 1966.

DEPOT SHIP (Navio Deposito) Former Training Ship

SANTO ANDRÉ (ex-Sagres, ex-Flores, ex-Max. ex-Rickmer Rickmers)

Displacement: Dimensions: Guns Machinery:

3,067 tons standard (3,176 tons full load) $263\frac{1}{2}\times40\frac{1}{3}\times19$ feet 4—47 mm. saluting 2 Krupp diesels. 2 shafts, B.H.P.: 700=8 kts.

General

General
Former German sailing vessel. Built at Bremerhaven, Launched in 1896. Captured during the First World War, Re-rigged as a barque and adapted as a naval training ship during 1924-27. Auxiliary motors were fitted in 1931. Formely had a normal complement of 209 officers and men plus 196 personel under training Reclassified as a depot ship and renamed Sonto André by a governmental decree of 31 Jan. 1962 with the new pennant No. A 5207 She was replaced by the training ship Guanabara, purchased from the Brazilian Navy and included in the Portuguese Navy on 8 Feb. 1962, which took the name and pennant number (A 520) of the former Sagres.

TRAINING SHIP (Navio-Escola)

SAGRES (ex-Guanabara, ex-Albert Leo Schlageter)

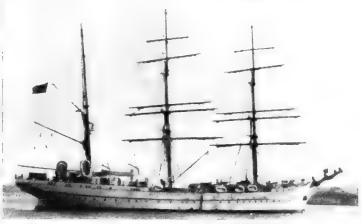
1,415 tons standard (1,869 tons full load) 229 $\frac{1}{2}$ (pp.), 249 (o.a.)×39 $\frac{1}{2}$ ×17 feet 20,793 sq. ft. Displacement:

Sail area: Height of mast: Machinery: Oil fuel: 142 feet 2 MAN auxiliary diesels. I shaft B.H.P.: 750=10 kts. 52 tons

Radius: 3,500 miles at 10 kts.

General

Former German sail training ship for 200 naval cadets. Built by Blohm & Voss, Hamburg. Launched im June 1937 and completed on 1 Feb. 1938. Sister of U.S. Coast Guard training ship Eggle (ex- German Horst Wessel). Taken by U.S.A. as a reparation after the Second World War in 1945 and sold to Brazil in 1948. Purchased from the Brazilian Navy and commissioned in the Portuguese Navy on 8 Feb. 1962 at Rio de Janeiro and renamed Sagres. Permant No. A 520.



SAGRES

1964, Eugenio A. Cavalheiro

FLEET OILERS (Navios Petroleiros)

S. GABRIEL

Displacement: Measurement: Dimensions:

9,000 tons standard (14,200 tons full load) 9,500 tons gross, 9,000 tons deadweight 452½ (pp.), 479 (o.a.)×59½×26½ feet 1 Pametrada geared turbine. 1 shaft S.H.P.; 9,500=17 kts.

Boilers: 6,000 miles at 15 kts.

General
Built at Estaleiros Navais de Viana do Castelo. Completed in 1962. Commissioned on 27 Mar. 1963, Pennant No. A 5206.



S GABRIEL

1966, Eugenio A. Cavalheiro

SAM BRAS

Displacement:

2,460 tons light, 5,600 tons standard (7,375 tons 7,375 tons full load)
7,000 tons gross, 3,500 tons deadweight
3364 (pp.), 3564 (o.a.)×504×18 feet
B. & W. 2-stroke diesel. 1 shaft B.H.P.: 2,820=12 kts.
11,000 miles at 12 kts. Measurement: Dimensions:

Machinery: Oil fuel: Radius:

Complement:

General

Built at the Arsenal do Alfeite. Laid down on 22 Feb. 1941. Launched on 17 Mar. 1942. Pennant No.: A 523.

(A small oiler, ex-U.S.S. YO 194, was transferred to Portugal by the U.S.A. under MAP), and is now redesignated BC 3.



SAM BRAS

1960, Portuguese Navy, Official

LIGHTHOUSE TENDER (Navio Balizador)

ALMIRANTE SCHULTZ

Displacement: Dimensions: Machinery: Oil fuel:

538 tons (officially revised figure)
131½×31×10½ feet
2 Rateau diesels 2 shafts B.H.P.: 500=9 kts.
21 tons

Oil fuel: Complement: 21 tons 47 (4 officers and 43 men)

built at Penhoët dockyard. Launched in 1929. A photograph appears in the1953-54 1957-58 editions. Pennant number A 521.

RUMANIA

SUBMARINES

8 Ex-U.S.S.R. Type

650 tons surface, 740 tons sub-Displacement:

Dimensions:

650 tons a...
merged
180×21×14½ feet
2-25 mm.
4-21 inch
Diesels. B.H.P.: 3,000=18 kts.

Electric motors. H.P.: 2,500= 16 kts. (submerged)

General Former Soviet submarines variously reported to be of the improved "Shch" or "Q" class.



MARSUINUL

Added 1953

MARSUINUL (\$ 2)

620 tons (surface)
190½×18½×11½ feet
1—4·1 inch, 1—37 mm. AA.
6—21 inch (4 bow, 2 stern)
Diesels. 2 shafts. B.H.P.: 1,840
=16 kts. (surface).
Electric motors=9 kts. (submerged)
60 tons
4,000 miles at 8 kts.
40 Displacement: Dimensions: Guns: Tubes: Machinery:

Oi fuel Radius: Complement:

Construction
Built by Galatz Shipbuilding Yard Laid down in 1938. Launched on 4 May 1941, and completed in 1942.

Both Marsulnal and Requinul were Rumanian built to German plans. Now over age and obsolescent, and may be discarded.

REQUINUL (S 1)

650 tons (surface) 223×19½×11½ feet 1—20 mm. AA. 4—21 inch (bow) Displacement: Dimensions: Guns: Tubes: 40

40
Diesels. 2 shafts. B.H.P.: 1,840
=17 kts. (surface).
Electric motors= 9 kts. (sub-merged)
60 tons
4,000 miles ar 8 kts.
40 Machinery:

Oil fuel: Radius: Complement:

Construction

Built by Galatz Shipbuilding Yard. Laid down in 1938, launched on 22 May 1941, and completed in 1942.

Disposal The submarine Deffinul, which received considerable damage during the war, was discarded in 1957.

4 Ex-U.S.S.R. "MV" Type

Displacement:

350 tons surface, 420 tons sub-merged 1671×16×12 feet 1—45 mm. AA. 2—21 inch Diesels. B,H.P. 800=13 kts. Dimensions: Guns: Tubes:

Machinery: (surface).

Electric motors, H.P.: 400, 8 kts.

Electric motors, H.P.: 400, 8 Kts. (submerged)
21 tons
4,000 miles at 10 kts. (surface);
100 miles at 5 kts. (submerged)
24 Oil fuel: Radius: Complement:

General

Former Soviet coastal submarines built in 1940 and taken over by Rumania in 1957.

2 Thornycroft Type

D 9 (ex- D 21, ex-Letuchi, ex-Regina Maria)
D 10 (ex-D 22, ex-Likhoi, ex-Regele Ferdinand)

1,400 tons standard (1,850 tons Displacement:

Dimensions:

1,400 tons standard (1,630 tons full load)
334½ ×31½×11½ feet
5—4.7 inch, 50 cal, 1—3 inch
AA., 2—40 mm. AA., 3 M.G.
6—21 inch (2 triple)
4 D.C.T. Guns:

A/S weapons:

Mines: 50 50 Parsons geared turbines by Stab, Tecnico Triestino. 2 shafts. S.H.P.: 42,000=38 kts. 4 water tube 400 tons 2 000 miles at 10 kts. 212 Machinery:

Boilers:

Oil fuel: Radius:

Complement: 212

General
Built by Pattison, Naples, to the design of John 1
Thornycroft & Co. Ltd., Woolston, Southampton.
Launched on 2 Mar. 1929 and 2 Dec. 1928, respectively.
Returned to Rumania in 1953 by U.S.S.R. by whom they
were captured from the Rumaniam Navy in 1944. It was
reported that they were re-armed. Now over age and obsolescent.

DESTROYERS (Distrugătoáre)



D 9

1960, courtesy Mr. P. H. Silverstone

Recent Disposals It is reported that the well over-age and obsolete destroyers Marasti (ex-Italian Sparvieto) and Marasesti ex-Italian Nibbio) have been discarded. One is said to have been scrapped at Constanta and the other is no more than a hulk.

Cruiser

The old light cruiser Kertch (ex-Stalingrad, ex-Z 15.
ex-Emanuele Filiberto Duca D'Aosta) was reported to
have been lent or leased by U.S.S.R. to the Rumanian
Navy. But in 1961 it was reported that she was being
scrapped. See U.S.S.R. section, 1959-60 edition.

Ex-U.S.S.R. "Riga" Class

950 tons standard (1,350 tons full load)
278 \(\frac{1}{2} \times 29 \frac{1}{2} \times 10 \) feet
3-3-9 inch AA., 8-37 mm AA. Displacement:

Dimensions:

Guns: 3-21 inch

D.C.T.

Tubes: A/S weapons: Mines:

Geared turbines. 2 shafts. S.H.P.: Machinery: 24,000=28 kts.

Boiler: Oil fuel:

300 tons Complement:

General

Former Soviet escort vessels of the "Riga" class built in 1955 and taken over by Rumania in 1957-58. Once reported to number six units, but some were never more than on a mission to the Rumanian Navy, and few are apparently now in service.

FRIGATES



RIGA Class

1958. Official

MINELAYER (Puitoare de Mine)

AMIRAL MURGESCU

Displacement:

812 tons standard 252½ (o.a.)×29½×8½ (mean) feet 2—4 inch d.p., 2—37 mm. AA. 2 D.C.T. 135 2 Krupp diesels. 2 shafts. B.H.P.: 2,100=16 kts. 2,100 miles at 10 kts. 78 (2 officers, 54 man crew, plus 2 officers for instruction and 20 students) Displacement:
Dimensions:
Guns:
A/S weapons:
Mines:
Machinery:
Padings Radius: Complement:

Construction
Built by Galatz Shipbuilding Yard. Laid down on 1 Aug. 1938. Launched on 14
June 1939. Completed in 1941.

Reported to have accommodation for about 20 midshipmen or naval cadets under

AMIRAL MURGESCU

Erich Gröner

MINESWEEPERS

4 Ex-German "M 40" Type

DESCATUSARIA

Eugl:

Displacement: Dimensions: Guns: Weapons: Machinery Boilers:

DESROBIREA DEMOCRATIA

543 tons standard (775 tons full load)
188 (pp.), 203\(\frac{1}{2}\) (o.a.) 28\(\times\)7\(\frac{1}{2}\) (max.) feet
6--37 mm. AA. (twin)
2 D.C.T.
Triple expansion. 2 shafts. I.H.P.: 2,400=17 kts.
2 three-drum water tube
152 tons coal
4,000 miles at 10 kts.
80

Radius: Complement: General

General
Former German "M 40" type coal-burning minesweepers. Built in 1943. Taken over by U.S.S.R. at the end of the Second World War. Transferred to Rumania in 1956-1957. The number of these vessels reported to have been acquired varies from four to fourteen, but photographs of only D 814, D 815 and D 816 (see above) have reached this annual.



D 814 and D 815

1964, courtesy Mr. P. H. Silverstone



D 816

1960, courtesy Mr. P. H. Silverstone

TRAINING SHIPS (Navă Şcoălă)

German Built Sail Type

MIRCEA

Displacement: Dimensions: Sail area: Machinery:

1.604 tons 239½ (o.a.) 267½ (with bowsprit)×39½×16½ feet 18,830 sq. ft. Auxiliary M.A.N. 6-cylinder Diesel. B.H.P.: 500=9·5

kts. 83+140 midshipmen for training

Complement:

General Built by Blohm & Voss, Hamburg, Laid down on 30 Apr. 1938. Launched on 22 Sep. 1938. Completed on 29 Mar. 1939 (delivered). Sail training ship.

Former Submarine Depot Ship

CONSTANTA
Displacement:
Dimensions:
Guns: 1.329 tons standard (2,300 tons full load) $255\frac{1}{3}\times37\times13\frac{1}{3}$ feet 2-4 inch, 2-40 mm. 2 sets Diesels. 2 shafts. B.H.P.: 1,000=13 kts. 12,000 miles

Machinery:

Radius:

General General
Built by Quarnaro Yard, Fiume. Laid down on 15 Aug. 1927. Launched on 8
Nov. 1928. Completed in 1931. Former submarine Depot Ship. Fitted with engineering and torpedo shops; torpedo loading room; salvage, diving and submarine signalling apparatus. Now used as a training ship. A photograph appears in the 1960-61 and earlier editions.

Former Royal Yacht

LIBERATEA (ex-Lucedforul, ex-Nahlin)
Displacement: 2.050 tons
Dimensions: 250 (w.l.), 296 (o.g.)×36×—feet
Machinery: 4 Brown-Curtis geared turbines. 2 shafts, S.H.P.: 4,000

= 17.5 kts. 2 Yarow. Oil fuel **Bailers:**

General General
Former Royal Yacht. Designed by G. L. Watson & Co. Built by John Brown & Co. Ltd., Clydebank, Scotland. Launched in 1930. Purchased in 1937. Used as a training ship.

Former Sail Yacht

RASARITUL (ex-Taifun)

Measurement: Dimensions: Machinery: 34 tons (Thames measurement) $54 \times 12\frac{1}{2} \times 3$ feet 2 petrol motors. 2 shafts

Built by J. Samuel White & Co. Ltd., Cowes, Isle of Wight, England. Launched in 1938. Of wooden construction. Yacht used as sail training ship.

PATROL VESSELS

3 Ex-U.S.S.R. "Kronstadt" Class

Displacement: Dimensions:

300 tons standard (350 tons full load) 167½×19½×9 feet 1—3:4 inch dual purpose forward. 2-

Guns:

throwing launchers, 2 side projectors, 2 depth tracks. 2 ahead throwing launchers, 2 sicharge tracks
Diesels. 2 shafts. Speed=27 kts.

A/S weapons:

Former Soviet submarine chasers transferred to Rumania from the U.S.S.R.

Disposals

DREPTATEA

The two old patrol vessels rated as gunboats (canoniere), namely Locotenent-Comandor Stiki Eugen (ex-French Friponne) and Sublocotenent Ghiculescu (ex-French Mignonne), are now over age and obsolete (see photograph and full particulars in the 1961-62 and earlier editions).

The two very old patrol boats, former Austrian torpedo boats (torpllogre), namely Sborul (ex-T 81) and Smeul (ex-T 83), are considered to be of no further militarry value and are being discarded and, it is reported, are to be scrapped (see full particulars in the 1961-62 and earlier editions and photograph in the 1960-61 and earlier editions).

The old river monitors Ardeal, Basarabia, Bratianu, Bucovina and Lahooari, and the old river gunboats Closca, Cusan and Horia, are reported to still exist.

MOTOR TORPEDO BOATS

8 Ex-U.S.S.R. "P 4" Class

Displacement: Dimensions: Guns: Tubes:

Machinery:

Former Soviet motor torpedo boats transferred to Rumania from the U.S.S.R.

INSHORE MINESWEEPERS

22 Ex-U.S.S.R. "T 301" Class

Displacement: Dimensions: Guns:

130 tons $100\times16\times4\frac{1}{2}$ feet 2-45 mm. AA., 4-12.7 m Diesel. B.N.P.: 480=10 kts. -12·7 mm, MG.

Complem

Transfer Former Soviet coastal minesweepers transferred to Rumania by the U.S.S.R. in 1956-60.

There are some launches on the Danube and some patrol boats in the Black Sea. Reports mention two surveying vessels; three landing ships (one LST and two LSM), ten landing carft (2 LCl and 8 LCT), ten transports and three oilers.

SAUDI ARABIA

RIYADH

General

Steel-hulled patrol boat of United States Coast Guard design transferred to Saudi Arabia in 1960, 102 tons, 95 feet, 1-40 mm, AA., 21 kts.

It is reported that a U.S. Navy "Auk" class minesweeper may be purchased for the Saudi Arabian Navy.

SENEGAL

PATROL BOATS

Ex-French VC Type

CASAMANCE (ex-VC 5, P 755)

Displacement: Dimensions:

75; tons standard (82 tons full load)
104;×15;×5; feet
2—20 mm. AA.
2 Mercedes-Benz diesels. 2 shafts. B.H.P.: 2,700=28 kts.
1.500 miles at 15 kts.
15 Guns: Machinery: Radius: Complement:

General
Former French patrol craft (vedette de Surveillance). Built by the Constructions
Mécaniques de Normandie, Cherbourg. Completed in 1958. Transferred from France
to Senegal in 1963.

Ex-U.S. SC Type

SÉNÉGAL (ex-P 700, Displacement: Dimensions: (ex-P 700, ex-CH

6 62, ex-U.S. SC 1344)
110 tons standard (138 tons full load)
107; (w.l.), 1108 (0.a.)×17×6; feet
1—40 mm. AA., 3—20 mm. AA.
2 General Motors diesels. 2 shafts. B.H.P.: 1,000=15 Guns: Machinery:

Oil fuel: Radius: 2,000 miles at 10 kts.. 1,150 miles at 15 kts.

Former American wooden submarine chaser. Transferred from U.S.A. to France on 19 Nov. 1943, and from France to Senegal at Dakar on 12 July 1961. First ship of the new Senegalese naval force.

SIERRA LEONE

The Sierra Leone Naval Volunteer Force is reported to have several small craft in use. (Sierra Leone became independent on 27 Apr. 1961).

SOMALIA

Somalia, which became an independent republic on 1 July, 1960, is reported to have a number of patrol boats.

SOUTH AFRICA

Administration

Naval Chief of Staff:

Vice Admiral H. H. Biermann, S.S.A., O.B.E., S.A.N.

Naval, Military and Air Attaché in London: Brigadier J. P. Verster, S.M., S.A.A.F.

Assistant Naval Attaché in London: Commander E.M. Kramer, S.A.N. Naval, Military and Air Attachè in Washington: Brigadier Glanville T. Moll, S.M., D.S.O.

Personnel

1966: 270 officers and 2,700 ratings

Naval Base

H.M. Dockyard at Simonstown was transferred to the Union of South Africa on 2 Apr. 1957

Mercantile Marine

Lloyd's Register of Shipping: 187 vessels of 302,308 tons gross

Launched

ANTI-SUBMARINE FRIGATES

F 150

3 "President" Class. Type 12

Displacement:

2,144 tons standard (2.557 tons full load)

Dimensions:

360 (pp.), 370 (o.a.)×41×13 (mean), 17 (max), feet

Guns:

2—4.5 inch (twin); 2—40 mm. Bofors AA. (twin); 4—3 pdr.

A/S weapons:

saluting Limbo three-barrelled depth

Machinery:

2 Limbo three-barrelled depth bomb mortars 2 sets double reduction geared steam turbines, 2 shafts. S.H.P.: 30,430=over 3C kts. 2 Babcock & Wilcox 190

Boilers: Complement: General

General Anti-submarine frigates of the "Whitby" type built in the United Kingdom during the period 1958-1964 as a part of the expansion programme announced by the Minister of Defence. President Kruger arrived in South Africa on 27 Mar. 1963.

Gunnery
The two 40 mm. AA. guns are on the main deck, a deck lower than in the "Whitby" class in the Royal Navy.

Engineering

The propelling machinery includes geared turbines of advanced design and high power which start on a cruising turbine and automatically switch over to the main turbine at a predetermined speed.

Electrical

The electrical system is alternating current, 440 volts, three phase, 60 cycles per second.

No. Name

PRESIDENT KRUGER
PRESIDENT PRETORIUS
PRESIDENT STEYN

Builders

Yarrow & Co. Ltd.. Scotstoun, Glasgow Yarrow & Co. Ltd.. Scotstoun, Glasgow Alex Stephen & Sons Ltd., Go/an, Glasgow

1962

Completed

20 Oct. 1960 1 Oct. 28 Sep. 1962 4 Mar. 23 Nov. 1961 25 Apr.



PRESIDENT PRETORIUS

1964, Wright & Logan

Design
Primarily designed for the location of the most modern type of submarines, these first-rate frigates are fitted with the latest underwater detection equipment and anti-submarine weapons of post-war development. Good seakeeping qualities enable them to maintain their high speed in rough seas. They are all welded and the structural arrangements were specially designed to save as much weight as possible. Air conditioned for tropical climates.

Nomenclature

Krugue was the last President of the old Transvaal Republic. Steyn was the last president of the old Orange Free State, Pretorius was the first president of the Transvaal Republic: he built and named the capital Pretoria after his father, one of the "Great Trek" leaders.

Photographs
A photograph of President Kruger appears in the 1963-64 to 1965-66 editions.



1966, South African Navy, Official

DESTROVERS

JAN VAN RIEBEECK (ex-H.M.S. Wessex, ex-Zenith) SIMON VAN DER STEL (ex-H.M.S. Whelp)

2 Former British "W" Class

Displacement: Dimensions:

1,710 tons standard (2,505 tons full load)

Tubes: A/S weapons: Aircraft: Machinery: full load)
339½ (pp.), 362½ (o.a.)×35½×
10 (mean), 16 (max.) feet
4—4 inch; 4—40 mm. Bofors
AA.; 4—3 pdr. saluting
4—21 inch (quadrupled)
4 D.C.T.
2 Westland Wasp helicopters
Parsons geared turbines 2 shafts.
S.H.P.: 40,000=36.75 kts. (designed) 31.25 kts. sea speed
2 Admiralty 3-drum type
186

Boilers: Complement:

General Purchased from Great Britain, Jan van Riebeeck was transferred to South Africa on 29 Mar. 1950, and Simon van der Stel early in 1952.

Gunnery
Main armament formerly comprised 4—4.7 inch guns.

Pennant No. D 278 D 237

Builders Fairfield Shipbuilding & Engineering Co. Ltd., Govan, Glasgow R. & W. Hawthorn I W. Hawthorn Leslie & Co. Ltd.,

20 Oct. 1942 I May 1942

Laid down

2 Sep. 1943 3 June 1943

Launched

Completed 11 May 1944 25 Apr. 1944



SIMON VAN DER STEL (after modernisation)

1964, South African Navy, Official

Modernisation Simon van der Stel was mo Jan van Riebeeck in 1964-66. modernised in 1963 and

Photographs A photograph of Jan van Riebeeck (before modernisation) appears in the 1954-55 to 1963-64 editions.

FAST ANTI-SUBMARINE FRIGATE (ex-Destroyer)

VRYSTAAT (ex-H.M.S. Wrangler)

Peunant No. F 157

Builders Vickers-Armstrongs, Ltd., Barrow-in-Furness Laid down 23 Sep. 1942

Launched 30 Dec. 1943

Completed

I Former British Type 15

Displacement:

2,100 tons standard (2,700 tons

Dimensions:

Guns:

Boilers:

2,100 tons standard (2,700 tons full load)
339½ (pp.), 362¼ (o.a.)×35½×
16 (max.) feet
2—4 inch. 2—40 mm. Bofors
AA.; 4—3 pdr. saluting
2 Squid triple-barrelled depth

A/S weapons:

Machinery:

2 Squid triple-parrelled depth charge mortars Parsons geared turbines, 2 shafts, S.H.P.: 40,000=36.75 kts, (da-signed) 31.25 kts, sea speed 2 Admiralty 3-drum type

Complement: 175

VRYSTAAT

1966, South African Navy, Official

Fully converted into a Type 15 fast anti-submarine frigate from a fleet destroyer of the "W" class in 1951-52 by Harland & Wolff Ltd., Belfast. Refitted by the Mount Stuart Dry Dock, Ltd., Cardiff, and taken

over from the Royal Navy on 29 Nov. 1956, as a unit of the South African Navy and renamed Vrystoot. Sailed for South Africa at the end of Jan, 1957. Class Originally a sister ship of Jan van Riebeeck and Simon van der Stel (see previous page).

FRIGATES

GOOD HOPE (ex-H.M.S. Loch Boisdale)

TRANSVAAL (ex-H.M.S. Loch Ard)

Pennant No. F 432 F 602

Builders Blyth Dry Docks & S.B. Co. Ltd. Harland & Wolff,

F157

Laid down 8 Nov. 1943 20 lan. 1944 Launched 5 July 1944 2 Aug. 1944 Completed 1944 1 Dec. 21 May 1945

2 Former British "Loch" Class

Displacement:

1,435 tons standard (2,260 tons

Guns:

1.435 tons standard (2,200 co...)
full load)
286 (pp.), 307 (o.a.)×38½×15
(max.) feet
Transvaal, 2—4 inch 6—40 mm.
Bofors AA.
Good Hope, 2—4 inch, 2—40
mm. Bofors AA., 4—3 pdr

A/S weapons:

Machinery:

Boilers:

724 tons Oil fuel: 9,500 miles at 12 kts, 140

Radius: Complement:

General
These two "Loch" class anti-submarine frigates, and
a sister ship, Natal, were presented to South Africa
by Great Britain in 1944-45.

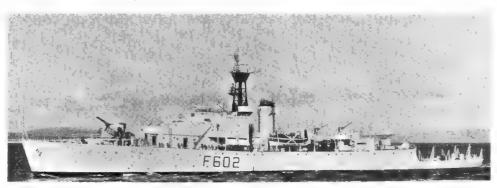
Construction

Transvaal was completed by Lobnitz & Co. Ltd., Renfew.

Modification

When Transvaal was modernised she had her forecastle deck extended aft to provide extra accommodation (see photograph)

Conversions
Good Hope was converted to a despatch vessel in 1955. She is primarily employed as a Training Ship. She has deckhouse superstructure for extra cabins, and reception platform above built on aft. Refitted in 1961. Sister ship Natal was converted into a survey ship in 1957, see next-page.



TRANSVAAL

South African Navy, Official



GOOD HOPE

South African Navy, Official

ESCORT MINESWEEPER

I Former British "Algerine" Class

PIETERMARITZBURG (ex-H.M.S. Pelorus)

Displacement:

1,040 tons standard (1,330 tons

Dimensions:

full load) 225 (o.a.) \times 35½ \times 11½ (max.) 225 (6.a.) \\ 35\frac{1}{2}\cdot (max.) \\
feet 2-4 inch: 2-40 mm Bofors \\
AA.

Guns:

A/S weapons: Machinery:

AA. 4 D.C.T. Triple expansion. I.H.P. 2,160-16 kts 2, of 3-drum type 270 tons

Boilers: Oil fuel: Radius:

2, 01 3-drum type 270 tons 5,000 miles at 10 kts.

Complement: 85

General

General Former "Algerine" class ocean minesweeper in the Royal Navy, also used as escort vessel. Purchased by South Africa from Great Britain in 1947. Pletermaritz-burg re-commissioned as a midshipmen's traning ship on 30 Aug. 1962. Disposal

isposar Sister ship Bloemfontein (ex-H.M.S. Rosamund) was Ald at Simonstown on 16 Mar. 1966.

Pennant No Builders Lobnitz & Co. Ltd., M 291

Laid down 8 Oct. 1942

Launched Completed 18 June 1943 7 Oct. 1943



PIETER MARITZBURG

South African Navy, Official

NATAL (ex-H.M.S. Loch Cree)

Pennant No. A 301

Builders Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne

SURVEY SHIP

Loid down 18 Oct. 1943 Launched 19 June 1944 Completed 8 Mar. 1945

British "Loch" Class. Former Frigate

1.435 tons standard (2.260 tons Displacement:

Dimensions:

1.435 tons standard (2,260 tons full load)
286 (pp.), 307 (o.a.)×38½
12 (mean) 14¾ (max.) feet
Triple expansion. 2 shafts. I.H.P.
5,500=19·5 kts, (max.) designed. Sea speed: 18 kts,
2 Admiralty 3-drum type
724 tons
9,500 miles at 12 kts.
124 Machinery:

Boilers: Oil fuel:

Radius:

Complement: 124

General

General Originally a "Loch" class frigate presented to South Africa by Great Britain in 1945. Converted into a survey ship in 1957, when guns and anti-submarine weapons were removed. Sister ship of Good Hope and Transvaal, see previous page.

Disposal
The survey ship Protea (ex-Flower' class frigate
H.M.S. Rockrose) was sold to commercial interests in 1962.



NATAL

South African Navy, Official

COASTAL MINESWEEPERS

10 British "Ton" Class (Type 1)

DURBAN M 1499
EAST LONDON (ex-Chilton) M 1215
JOHANNESBURG (ex-Castleton) M 1207
PRETORIA (ex-H.M.S. Dunkerton) M 1144
KAAPSTAD (ex-H.N.S. Hazleton) M 1210
WALVISBAAI (ex-Packington) M 1214
KIMBERLEY (ex-Stratton) M 1210

Displacement: Dimensions: Guns: Machinery:

360 tons standard (425 tons full load)
140 (pp.), 152 (o.a.)×28½×8½ feet
1—40 mm. Bofors AA., 2—20 mm. AA.
Diesels (Mirrlees in Kaapstad and Pretoria. B.H.P.:
2.500. Deltic in remainder. B.H.P.: 3,000)=15 kts.

Complement:

General
Basically similar to the "Ton" class coastal minesweepers in the Royal Navy. Kaapstad and Pretoria, which have lattice masts and open bridge, were purchased in 1955. A modified ship, Windhoek, with frigate bridge and tripod mast, was launched at John I. Thornycroft & Co. Ltd., Woolston, Southampton, on 27 June 1957. Durban, which also has a covered bridge and tripod mast, was launched at Camper & Nicholson's Gosport, on 12 June 1957. East London and Port Elizabeth were transferred from the Royal Navy to the South African Navy at Hythe, Southampton Water, on 27 Oct. 1958, and sailed for South Africa in Nov. 1958. Johannesburg, Kimberley and Mosselbaai were delivered in 1959. Walvisbaai was launched by Harland & Wolff, Belfast, on 10 Dec. 1958 and delivered in 1959.

A photograph of Pretoria appears in the 1956-57 to 1962-63 editions, and of Windhoek in the 1958-59 to 1963-64 editions. General



IOHANNESBURG

1964, South African Navy, Official



KIMBERLEY

Added 1962, South African Navy, Official

SEAWARD DEFENCE MOTOR LAUNCHES

5 Ex-HDML Type

SDML 1202 SDML 1203 SDML 1197 SDML 1200

SDML 1204

Displacement: Dimensions: Machinery:

SDML 1203
46 tons standard (54 tons full load)
72 (o.a.)×158×5∮ feet
2 Gardner 8-cylinder diesels. B.H.P.: 130=11 kts.
11 to 14 Complement:

General
Former HDMLs (Harbour Defence Motor Launches) later lesignated Seaward
Defence Motor Launches. All built in South Africa. Their guns have been removed.
Used as tenders to South African Naval Bases. SDML 1202 has been converted to a
gunnery practice target. SDML 1330 and SDML 1331 were stricken off in 1953 and
SDML 1199 and SDML 1201 in 1955. SDML 1198 was scrapped in 1956 and SDML
1332 on 11 Feb. 1958.

SEAWARD DEFENCE BOATS

5 British "Ford" Class

GELDERLAND (ex-H.M.5. Brayford)
P 3105 NAUTILUS (ex-H.M.S. Glassford) P 3120 OOSTERLAND F 3127 RIJGER P 3125 HAERLEM P 3126

Displacement: Dimensions: Guns: A/S weapons:

120 tons standard (160 tons full load)
110 (pp.), 117½ (o.a.)×20×4½ feet
1—40 mm. AA.
2 D.C.T. in Haerlem, Oosterland and Rijger. Depth charge release gear. Flares
2 Davey Paxman diesels. Foden engine on centre shaft.
B.H.P.: 1,100=18 kts. (max.) Sea speed: 15 kts.
24 Machinery:

Complement:

Complement: 24

General

Similar to "Ford" class, 3101 series, in the Royal Navy. Gelderland was purchased from Great Britain in 1954, being handed over to the South African Navy at Portsmouth on 30 Aug. 1954. They were a new design of naval vessel, their purpose being to detect, locate and destroy submarines, including midget submarines, in the approaches of defended ports. They have modern electronic equipment for armament, and a comprehensive electrical installation. Gelderland was built by A. & J. Inglis Ltd., Glasgow. Second ship, Nautilus, was purchased in 1955, Rigger was launched at Vosper Ltd., Portsmouth, on 6 Feb. 1958. Hacelem was launched at Vosper Ltd., Portsmouth, on 18 June 1958. Oosterland was launched at Vosper Ltd., Portsmouth, on 17 Jan 1959. All three of these later ships are fitted with roll damping fins developed and manufactured by Vosper. Hacelem has had a charthouse added aft while employed as an inshore survey boat.

A photograph of Gelderland appears in the 1955-56 edition, of Nautilus in the 1956-57 to 1959-60 edition, and of Rijger in the 1964-65 and 1965-66 editions.



HAERLEM (charthouse added aft)

1966, South African Navy, Official

BOOM DEFENCE VESSEL

I British "Bar" Class

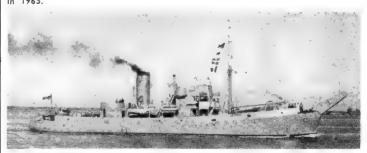
SOMERSET (ex-H.M.S. Barcross) P 285

750 tons standard (960 tons full load)
150 (pp.), 182 (o.a.)×32½×11½ feet
Triple expansion, 1.H.P.: 850=11 kts.
2 S.E.
186 tons Displacement: Dimensions: Machinery: Boilers: Oil fuel:

Complement: 32

General

Built by Blyth Dry Dock & S.B. Co. Ltd. Laid down on 15 Apr. 1941, ched on 21 Oct. 1941 and completed on 14 Apr. 1942. Engined by S. Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne. Transferred from Britain. Of the same type as the "Bar" class boom defence vessels in the Navy. Renamed in 1951 after the traditional name for Dick King's horse. Ship Fleur (ex-H.M.S. Barbrake) P 273 was discarded and expended as a time 1945. Swan, Great ship Fleu in 1965. target



SOMERSET

R. M. Scott

DE NOORDE. Built by Globe Engineering Works Ltd., Cape Town. Completed in Dec. 1961. Displacement 170 tons, length 104½ feet, beam 25 feet. Two Lister Blackstone engines, twin screw.

SPAIN

Administration

Minister of Marine: Admiral Excmo. Sr. Don Pedro Nieto Antunez

Chief of Naval Staff:

Admiral Excmo. Sr. Don Rafael Fernandez de Bobadilla

Deputy Chief of Naval Staff: Vice-Admiral Excmo. Sr. Don Alfredo Lostau Santos.

Commander-in-Chief of the Fleet: Vice-Admiral Excmo. Sr. Don Miguel A-Garcia Agullo y Aguado. Naval Attaché in London:

Captain Sr. Don José Ramón González López.

Naval Attaché in Washington:

Captain Sr. Don Teodoro de Leste Cisnegos

Personnel

1966: Total 50,025 (4,349 officers, 35,087 ratings, 4,731 civil branch, 5,858 marines)

New Programme

A programme of new construction is being planned, including 5 frigates of U.S. design and 2 submarines of French design.

Navy Estimates

2,539,719,085.66 pesetas. 2,580,829,918.28 pesetas. 1958: 1959: 2,655,883,903.00 pesetas. 1960: 1961: 2,658,479,733.00 pesetas. 3,314,590,252.00 pesetas. 3,559,743,625.00 pesetas. 3,904,880,558,00 pesetas. 1962: 1963: 1964: 1965: 4,000,000,000.00 pesetas.

Mercantile Marine

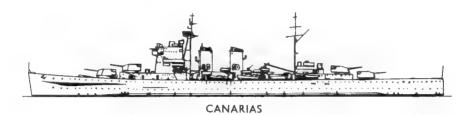
4,000,000,000.00 pesetas.

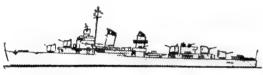
1966:

Lloyd's Register of Shipping: 1,814 vessels of 2,132,002 tons gross

Silhouettes

Scale 150 ft.=1 inch.





ALMIRANTE FERRANDIZ



ALMIRANTE VALDES



LEPANTO



AUDAZ Class





ALAVA, LINIERS



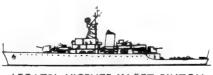
PIZARRO Class



MARTE, NEPTUNO



ALMIRANTE ANTEQUERA Class



LEGAZPI, VICENTE YAÑEZ PINZON



DESCUBIERTA



OQUENDO



JUPITER, VULCANO



ATREVIDA Class

SUBMARINES (Submarinos)

2 New Construction French "Daphne" Type Displacement:

Tubes:

850 tons surface, 1040 sub-

Dimensions:

merged $190\frac{1}{4} \times 22\frac{1}{4} \times 15\frac{1}{2}$ feet 12-21.7 inch (8 bow, 4 stern)

General

Two submarines basically similar to the French "Daphne" class are to be built by France for Spain in Spanish Yards.

ALMIRANTE GARCIA DE LOS REYES E 1 (ex-U.S.S. Kraken, SS 370)

Pennant No. S 31

Builders Manitowoc S.B. Co. Launched 30 Apr. 1944

Completed 8 Sep. 1944

I Ex-U.S. "Balao" Type

Displacement:

Dimensions:

Machinery:

1,526 tons standard, 1,880 tons surface (2,059 tons submerged) 306½×27×17 feet 10—21 inch 4 diesels, B.H.P.: 6,400=20 kts. (surface) Electric motors: H.P. 4 600=10 Electric motors: H.P.: 4,600=10

kts. (submerged)

Ex-U.S. "Balao" class. Transferred on 24 Oct. 1959 after modernisation and overhaul at Pearl Harbour.



ALMIRANTE GARCIA DE LOS REYES

1961. Spanish Navy, Official

2 "D" Class

Completed No. Laid down Launched Sep. 1934 21 Dec. 1944 2 Apr. 1951 Sep. 1945 20 Feb. 1952 20 Feb. 1954 \$ 21 \$ 22

Displacement:

Dimensions: Guns:

Tubes: Machinery: 1,099 tons standard, 1,200 tons surface (1,480 tons submerged) 276½×22×13 feet
None as modernised
6—21 inch (4 bow, 2 stern)
2 Sulzer diesels. B.H.P.: 5,000
=20:5 kts. (surface)

2 Suizer diesels. B.H.P.: 5,000 = 20.5 kts. (surface)
Electric motors. H.P. 1,300= 9.5 kts (submerged)
9,000 miles (surface)
75

Radius: Complement:

General

General Ordered under the 1926 Programme. Both built at the Sociedad Española de Construction Naval, Cartagena. Construction was held up by the Civil War. Diving limit, 50 fathoms. D 2 (\$ 21) and D 3 (\$ 22) were delivered after modernisation on 10 Dec. 1963 and 14 Mar. 1963, respectively. Allocated \$ pennant numbers in 1961. Sister ship D 1 (\$ 11), which was not modernised, was deleted from the list in 1966.





1964. Empresa Nacional Bazan

I Ex-German Type

~G 7 (ex-U 573)

Displacement:

711 tons standard, 757 tons surface (865 tons submerged) 227½×20½×14¾ feet 1:-3·5 inch (4 bow, 1 stern) Diesels. B.H.P.: 2,800=17·9 kts.

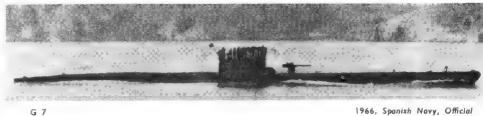
Dimensions:

Guns: Tubes: Machinery:

(surface)

(surrace)
Electrict motors H.P.: 750=
8.5 kts. (submerged)
6,500 miles (surface)

Radius: Complement:



1966, Spanish Navy, Official

General

D 3

German U-boat of the VII Type, built by Voss, Hamburg, Interned in Spain in 1942.

Purchased from Germany the following year, Allocated pennant number $\,$ S $\,$ 01 in $\,$ 1961.

2 "Tiburon" Class

Displacement:

SA 52

Dimensions:

Tubes: Machinery:

SA 52
78 tons surface (81 tons submerged)
70½×9×9 feet
2—21 inch
6 cyl. Paxman diesels. B.H.P.:
400—10 kts. surface
Electric motors H.P.: 400=14·5
kts. submerged

kts. submerged
5 officers and men

Complement:

General

Midget submarines launched in 1958. All four originally rated Submarinos Experimentales, but in 1963 designated Assault Submarines with "SA" numbers. Cancellation

Cancellation

The construction of four new submarines G 1, G 2, G 3, G 4 (G 5 and G 6 were also projected originally) ordered in 1945 at Cartagena, which were to have been generally similar to the Ex-German G 7, was abandoned. U.S. submarines were expected to be acquired under the Mutual Defense Assistance Program in their place.



1966, Spanish Navy, Official

2 "Foca" Class

SA 41

Displacement:

16 tons surface (20 tons sub-

Dimensions:

Tubes: Machinery: merged) 45½×6×5 feet 2—21 inch

2-21 inch
1 Pegasus diesel. B.H.P.: 160=
9.2 kts. surface. 1 Siemens
electric motor. H.P.: 110=12
kts. submerged
1,400 miles

Radius

Complement:

General Midget submarines launched in 1957 and numbered 58. Officially revised figures above.



SA 42 1966, Spanish Navy, Official sposals

Evangelista Torricelli) and General Saniurjo (ex-ArchiThe two former Italian submarines General Mola (ex- mede) were removed from the Navy List in 1959. Disposals

HEAVY CRUISER

(Rated as Crucero Type 2)

Displacement:

Guns:

10,670 tons standard (13,500 tons full load)
Lenght: 636½ feet, Beam: 64 feet. Draught: 21½ feet
8—8 inch. 50 cal.; 8—4·7 inch
AA., 45 cal.; 4—1·5 inch 70
cal.; 4—37 mm. AA.; 2—20
mm. AA.
1½"—2" side, 1" turrets, 4"
magazines.
Parsons geared turbines. 2 shafts.
Designed S.H.P.: 92,000=33
kts.

Armour:

Machinery:

Boilers: Oil fuel:

kts.

kts.
2,794 tons
7,800 miles at 11 kts. Radius: Complement:

General
This ship was designed by the late Sir Philip Watts on the basic pattern of the contemporary British heavy cruisers of the later "County" classes. She was named after the Canary Islands. From initial completion until 1952 she had trunked funnels, but she emerged from refit early in 1953 with two seperate funnels, this being a reversion to the original design which had never been carried out.

Modernisation
To be completely overhauled as Flagship of the

Modernisation
To be completely overhauled as Flagship of the Spanish Navy, under the Spanish Naval Modernisation Programme (United States Military Aid Programme). Torpedo Tubes
The 12—21 inch torpedo tubes in triple mountings which she formerly carried, were removed in 1960. Gunnery

Gunnery

The maximum elevation of the 8 inch guns is 70 degrees.

degrees.

Class
Sister ship Baleares was torpedoed and sunk on 6

Mar. 1938 during the Spanish Civil War.

Drawing
Fort elevation and plan. Scale: 128 feet=1 inch.

Redrawn in 1966.

Disposals

Disposal's

"Galicia" Class cruisers:—Almirante Cervera, Galicia and Miguel de Cervantes were stricken from the Navy List in 1966.

The arti-aircraft cruiser Mendez Nuñez was stricken in 1963, and the light cruiser Navarra in 1956.

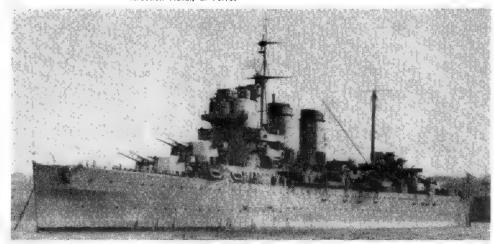
Builders CANARIAS

Sociedad Espanola de Con-struction Naval, El Ferrol

Laid down 15 Aug. 1928

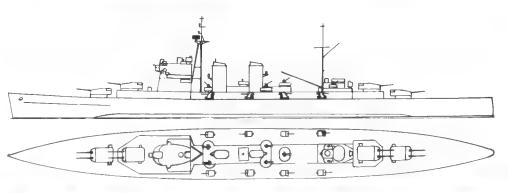
Launched 28 May 1931

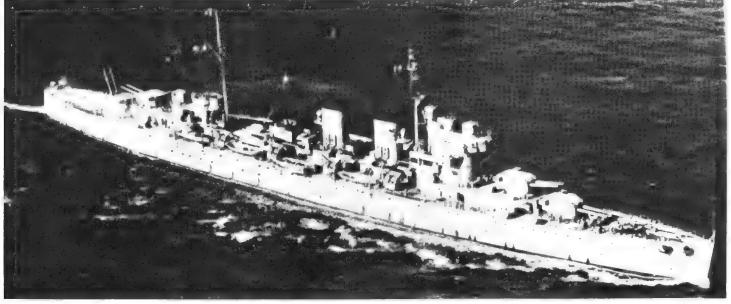
Completed 1 Oct. 1936



CANARIAS

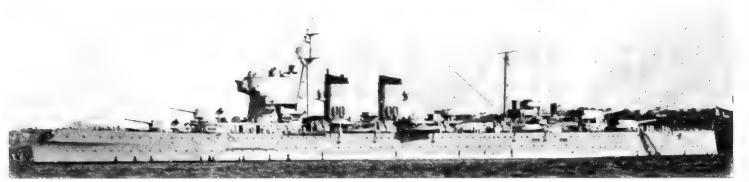
1964, Spanish Navy, Official





CANARIAS

1966, Spanish Navy, Official



CANARIAS

1964, Spanish Navy, Official

No. CABOT (ex-Wilmington) AVT 3 (ex-CVL 28) Ex-Aircraft Transport (AVT)

Former Aircraft Carrier (CVL) I "Cabot" Class

Displacement: Dimensions;

11,000 tons standard (15,800 tons full load)
Length: 600 (w.l.), 623 (o.a.) feet. Beam: 71½ feet (hull).
Width: 109 (exteme) feet
Draught: 26 feet
G.E. geared turbines. 4 shafts.
S.H.P.: 100,000-32 kts.
4 Babcock & Wilcox

Machinery:

Boilers:

General

Completed as an aircraft carrier after having been laid down as a cruiser of the "Cleveland" class. Originally carried over 40 aircraft. Cabot was converted to ASW, i.e. modified to specialise in antisubmarine warfare, and classed as a "Hunter-Killer Carrier" with strengthened flight and hangar decks, large port side catapult, revised magazine arrangements, new electronic gear, corrected stability to counter added top weight, and a maximum of 26 aircraft. She was practically modernised to a new type, As an aircraft carrier the original complement was 1,109 (159 officers and 950 men) to 1,183 (peace scheme), 1,400 (war scheme).

Originally designed to include 4—5 inch guns in armament. Latterly mourted 28—40 mm, AA.

Since conversion Cabot has only two of her original four funnels. Transfers

U.S. approval to loan the amphibious assault ship

U.S. approval to loan the amphibious assault ship Thetis Boy, LPH 6, former assault helicopter carrier CVHA 1, converted escort aircraft carrier CVE 90, to Spain for five years was given in Aug. 1965, but this was rescinded, and instead Cabot is being reactivated and modernised at Philadelphia Naval Shipyard, scheduled for completion by May 1967, for transfer to Spain as a helicopter carrier.

HELICOPTER CARRIER

Builders
New York Shipbuilding Corporation

Laid down 16 Aug. 1942

Launched 4 Apr. 1943

Completed July 1943 24 July



CABOT

added 1966

ANTI-SUBMARINE DESTROYERS (Destructores Caza Submarinas)

9 "Audaz" Class

1,227 tons standard (1,548 tons full load) officially revised Displacement:

Dimensions:

full load) officially revised figures 295½ (pp.), 308½ (o.a.)×30½×10 (mean), 17 (max.) feet 2—3 inch, 50 cal AA.; 2—40 mm., 70 cal. AA. 2 Hedgehogs, 8 mortars, 2 D.C. racks, 2 side launching torpedor racks, 6 A/5 torpedoes Rateau-Bretagne geared turbines, 2 shafts. S.H.P.: 28,000=31.6 kts

A/S weapons;

Guns:

Boilers:

Machinery:

2 snares.

kts,
3 La Seine of 3-drum type
290 tons
3,200 miles at 14 kts.
191 (official figure)

Oil fuel:

Radius: Complement:

General

Based on the design of the French "Le Fier" type.

All built at Ferrol. Allocated D pennant numbers in
1961, but still referred to officially and unofficially
as fast frigates, see Classification note below.

Modernisation

Modernisation
Dates of delivery after modernisation:—Arlete 7 Feb.
1961, Audaz 28 June 1961, Furor 9 Sep. 1960, Meteoro
21 Feb. 1963, Osado Aug. 1961, Rayo 21 Feb. 1963.
All of this class were equipped with U.S. electronic and
ASW equipment under the Military Aid Programme.

Before rearmament and modernisation these ships mounted 3—4·1 inch guns, 4—37 mm. AA, guns and 8—20 mm. AA. guns.

The boilers are in two compartments separated by the engine rooms. Steam is superheated to 375 degrees Fahrenheit. Working pressure is 500 lb. per sq. in. Engines have developed 30,800 S.H.P. on trials and 32,500 S.H.P. max.=33 kts.

Classification
These ships were originally projected as conventional destroyers but their classification was changed to fast figates in 1955, they were again re-rated, as anti-submarine frigates, in 1956, and as ani-submarine destroyers in 1961.

Meanings of names: Arlete, battering ram; Audoz audacious; Furor; fury; Intrépido, fearless; Osado, daring; Rayo, thunderbolt; Relámpago, lightning flash; Temerario, venturesome.

Photographs Photographs of Audaz appear in the 1952-53 to 1955-56, 1957-58 and 1962-63 to 1965-66 editions, of Osada in the 1956-57 and 1957-58 editions, of Metero in the 1956-57 to 1960-61 editions, of Rayo in the 1956-57 to 1960-61 editions, of Furor in the 1961-62 edition, and of Arlete in the 1962-63 to 1965-66 editions.

	No.	Laid down	Launched	Completed
ARIETE	D 36	3 Aug. 1945	24 Feb. 1955	7 Feb. 1961
AUDAZ	D 31	26 Sep. 1945	24 Jan. 1951	30 June 1953
FUROR	D 34	3 Aug. 1945	24 Feb. 1955	9 Sep. 1960
INTRÉPIDO	D 38	14 July 1945	15 Feb. 1961	
METEORO (ex-Atrevido)	D 33	3 Aug. 1945	4 Sep. 1951	30 Nov. 1955
OSADO	D 32	3 Aug. 1945	4 Sep. 1951	25 jan. 1955
RAYO	D 35	3 Aug. 1945	4 Sep. 1951	25 Jan. 1956
RELÁMPAGO	D 39	14 July 1945	26 Sep. 1961	_
TEMERARIO	D 37	14 July 1945	29 Mar. 1960	16 Mar. 1964



FUROR

1966, Spanish Navy, Official



TEMERARIO

1966, Spanish Navy, Official

Launched

15 July 1959 5 Sep. 1956 12 Nov. 1958

I "Oquendo" Type 2 Modified "Oquendo" Type

3,496 tons (revised official figures);

Dimensions:

Guns:

A/S weapons:

3,496 tons (revised official figures);

Oquendo: 2,582 tons standard (3,005 tons full load) revised official figures

391½×41×18 feet

Oquendo: 382×36½×12½ feet
3-5 inch, 38 cal. Oquendo: 4
-4·7 inch, 50 cal. AA. (2 twin), 6-40 mm., 70 cal. AA.

2 Mk, 32 triple tubes; 2 Mk.

25 single tubes; 1 DASH

Oquendo: 2 Hedgehog, 2 torpedo racks

2 Rateau-Bretagne geared turbines. S.H.P.: 60,000=38 kts.

3, of 3-drum type

673 tons (Oquendo 659 tons)

2,280 miles at 20 kts.

308 (Oquendo 249)

Machinery; Boilers:

Oil fuel: Radius: Complement:

All ordered at Ferrol in 1947-48. Oquendo was initially completed on 13 Sep. 1960, and completed modernisation on 22 Apr. 1963.

Construction
Originally designed as conventional destroyers, but modified during construction. The seven 21-inch torpedo tubes and two depth charge throwers were suppressed in favour of more modern anti-submarine weapons.

Anti-Submarine Destroyers-contd.

Pennant No. Laid down MARQUÉS DE LA ENSENADA D 43 D 41 D 42 4 Sep. 1951 15 June 1951 4 Sep. 1951 OQUENDO ROGER DE LAURIA



Roger de Laurla and Marqués de la Ensenada were towed to Cartagena and dismantled for reconstruction to a new design.
(Bias de Lezo, Biasco de Garay, Bonifaz, Gelmirez, Langara and Recalde of this class were cancelled in

1964, Empresa National Bazan

Classification This class was re-classified as anti-submarine frigates in 1955, again re-rated as fast frigates in 1956, and as anti-submarine destroyers in 1961.

Launched

Laid down

12 June 1941 23 Feb. 1942

ALCALA GALIANO (ex-U.S.S. Jarvis, DD 799)
ALMIRANTE FERRANDIZ (ex-U.S.S. David W. Taylor DD 551
ALMIRANTE YALDES (ex-U.S.S. Converse, DD 509)
JORGE JUAN (ex-U.S.S. McGowan, DD 678)
LEPANTO (ex-U.S.S. Capps, DD 550)

5 "Lepanto" Class

Displacement:

Dimensions: Guns:

Tubes:

A/S weapons:

Machinery:

Boilers:

Oil fuel:

Radius: Complement: 6,000 miles at 15 kts. 290

General

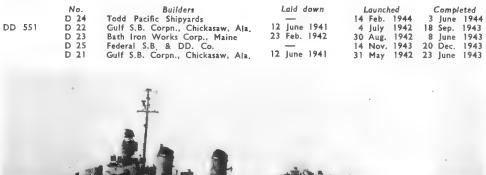
General
Former United States fleet destroyers. Capps, renamed Lepanto, and David W. Taylor, renamed Almirante Ferrandiz, were the first units of the "Fletcher" class to be transferred to a foreign government: loaned to Spain for a period of five years, they were reconditioned at San Francisco and turned over to the Spanish Navy at San Francisco, California, on 15 May 1957 sailing for Spain on 1 July 1957. Converse, renamed Almirante Valdes, was transferred to the Spanish Navy at Philadelphia on 1 July 1959. McGowan, renamed Jorge Juan, was transferred at Barcelona or 1 Dec. 1960 and Jarvis at Philadelphia on 3 Nov. 1960, both being of the Later "Fletcher" class and transferred on a five year renewable loan basis, under the Military Aid Programme. All five ships were allocated D pennant numbers in 1961.

Photographs

Photographs
A port bow oblique aerial view of Almirante Ferrandiz appears in the 1958-69 and 1959-60 editions., a port dead broadside surface view of Lepanto in the 1958-59 to 1961-62 editions, a starboard bow view of Almirante Veldes (as re-armed) appears in the 1960-61 edition, starboard bow surface view of Alcalá Callano in the 1961-62 to 1965-66 editions, and a port broadside surface view of Almirante Ferrandiz in the 1962-63 to 1965-66 editions.

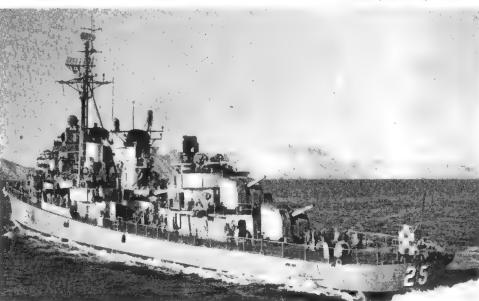
Appearance

Appearance
Alcalá Galiano and Jorge Juan have tripod mast, and
Almirante Ferrandiz, Almirante Valdés and Lepanto
have pole mast, See also differing number of 5 inch
guns in data table above.



LEPANTO (five 5 inch, pole mast)

1966, Spanish Navy, Official



JORGE JUAN (four 5 inch, tripod mast)

1966, Spanish Navy, Official



ALMIRANTE VALDÉS (four 5 inch, pole mast)

1966, Spanish Navy, Official

DESTROYERS (Destructores)

ALAVA LINIERS

Pennant No. D 52 (ex-23) D 51 (ex-21)

Builders Cartagena Cartagena Laid down 21 Dec. 1944 1 Jan. 1945

Launched 19 May 1947 1 May 1946 Completed 21 Dec. 1950 27 Jan. 1951

Modernised 17 Jan. 1962 18 Sep. 1962

2 " Alava" Class

Displacement:

1842 tons standard (2,287 tons full load) officially revised

Dimensions:

Guns:

Tubes: A/S weapons: figures

341½×31½×19½ feet
3—3 inch, 50 cal, mk. 22, AA.;
3—40 mm. 70 cal. AA.
Removed (see Torpedo Tubes)

2 Hedgehogs, 8 D.C. mortars. 2
D.C. racks 2 side launching
torpedo racks, 6 A/S torpedoes
Parsons geared turbines 2 shafts.

5.H.P.: 31,500=30 kts. (28
kts. sea speed)

3 Yarrow, of 3-drum type
370 tons

Boilers: Oil fuel: Radius: Complement:

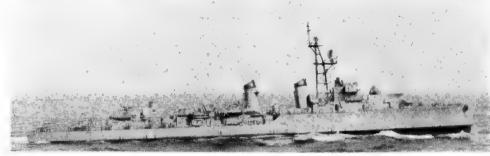
Machinery:

3 Yarrow, 5. 370 tons 3,500 miles at 16 kts.

200

Construction

Construction
These two destroyers, a development of the Churruca
design were ordered in 1936, but construction was held
up by the Civil War. After being resumed, it was again
suspended in 1940, but restarted at the Empresa Nacional Bazán, Cartagena in 1944



1966, Spanish Navy, Official

LINIERS

Photographs
Photograph of Alava appear in the 1953-54 to 1965-66 editions.

Gunnery

Before modernisation on the lines of fast frigates these ships mounted 4—4.7 inch, 6—37 mm; AA, and 3—20 mm. AA, guns.

Torpedo Tubes

This class have had no torpedo tubes since they were modernised in 1962. They formerly carried 6-21 inch (tripled), but now have torpedo racks for six homing torpedoes instead of tubes.

2 " Almirante Antequera " Class

("Churruca" Group 2)

Displacement:

1,590 tons standard (2,130 tons officially

Dimensions:

tons s (ull load) figures 320 (** figures 320 (pp.), 333 (o.a.)×31½×19¾ feet 4—4.7 inch, 45 cal.; 2—20 mm. AA.
Side launching torpedo racks,

Guns:

A/S weapons:

Side launching torpedo racks, 4 D.C.T.
2 sets Parsons geared turbines. 2 shafts. S.H.P.: 42,000=36 kts.

Machinery: Boilers:

Oil fuel:

Yarrow 500 tons 2.100 miles at 14 kts. Radius Complement:

202

ALMIRANTE ANTEQUERA
ALMIRANTE MIRANDA

Pennant No. D 14 D 15

Launched 29 Dec. 1930 20 Oct. 1931

Combleted 30 May 1935 30 May 1935



ALMIRANTE ANTEQUERA

Disposals
Of the "Churruca" Group 2, Ciscar, sunk in the
Civil War in Oct. 1937, but salved and refitted in
1938-39, ran aground in fog and broke her back off
El Ferrol on 17 Oct. 1957, and was discarded in 1958.
Jorge Juan was removed from the Navy List in 1959.
and Escaño, Gravina and Ulloa in 1964.

1965, Spanish Navy, Official

Disposals of Group 1
Of the "Churruca" Group 1, Lepanto, Alcala Galiano and Almirante Valdes were removed from the list in 1957, Churruca in 1964, Sanchez Barcalztegul in 1965, and Jose Luiz Diez in 1966.
Disposals of older Destroyers
Of the "Alsedo" class, Alsedo and Velasco were removed from the list in 1957, and Lazaga in 1961.

FRIGATES (rated as Fragatas)

5 Guided Missile Armed

General
Built at Cartagena by Sociedad Española de Construccion Naval, This class is a later version of the "Sanchez Barcalztegul" design. Now have D pennant numbers painted on bows which replaced the former numbers in 1961.

U.S. DE Type

Displacement: 3,400 tons
Guided weapons: 1 launcher for "Tartar" surfaceto-air missiles

General
In June 1966 Spain and U.S.A. signed an agreement for construction of five guided missile frigates in Spain with technical and material assistance provided U.S.A.

8 "Pizarro" Class

1,924 tons standard (2,228 tons full load) officially revised Displacement: figures: Dimensions:

Guns:

full load) officially revised figures:

279 (pp.), 312½ (o.a.)×39½ ×17½ (max.) feet
Legazpi and Vincente Jañez
Pinzon as modernised: 2—5 inch
38 cal.; 4—40 mm., 70 cal. AA.
Remainder: 6—4·7 inch AA. (3 twin), 8—37 mm. AA.
Legazpi and Vincente Yañez Pinzon as modernised: 2 Hedgehogs,
8 mortars, 2 D.C. racks, 2 side launching torpedo racks
Remainder: 4 D.C.T.
30 (capacity) can be carried
2 sets Parsons geared turbines.
2 shafts. B.H.P.: 6,000=18·5 kts.

A/S weapons:

Mines: Machinery:

Boilers: Oil fuel: Radius: kts. 2 Yarrow

2 Yarrow 390 tons 4,000 miles at 14 kts.

Complement:

General

General All built at Ferrol. Designed to carry 30 mines. Rated as Canoneras (Gunboats) until 1958 when they were officially re-rated at Fragatas, Allocated F pennant numbers in 1961. Legazpi and Vicente Yañez Pinzon completed modernisation on 14 Jan. and 25 Mar. 1960 respectively.

A photograph of Vincente Jañez Pinzon after modern-isation appears in the 1962-63 to 1965-66 eitions.

Completed 18 Sep. 1947 8 Aug. 1951 20 Dec. 1948 18 Mar. 1948 No Launched Launched 3 Aug. 1944 8 Aug. 1944 8 Aug. 1944 3 Aug. 1944 3 Aug. 1944 8 Aug. 1944 3 Aug. 1944 HERNAN CORTES LEGAZPI MAGALLANES F 32 F 42 F 35 F 34 F 31 E 36 F 33 F 41 1948 1948 1946 MAGALLANES MARTIN ALOÑSO PINZON PIZARRO SARMIENTO DE GAMBOA VASCO NUÑEZ DE BALBOA VICENTE YAÑEZ PINZON Aug. May Mar. 1950 5 Aug.



LEGAZPI

1966, Spanish Navy, Official

FRIGATE MINELAYERS (Minadores)

2 "Eolo" Class

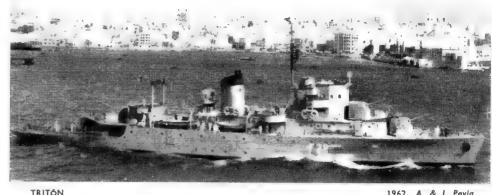
	Pennant	No.	Lounc	hed	C	ombl	eted
EOLO TRITÓN	F 21 F 22		O Sep.				1942 1943
Displa	cement:	1,723 full		standa offi			

Dimensions: Guns: A/S weapons:

figures 2913×381×173 (max.) feet 4—4·1 irrch, 4—37 mm. AA., 2 D.C.T. Stowage for 170 (Tritón, 180) Parsons geared turbines. 2 shafts. S.H.P.: 5,000=19·5 kts. 2 Yarrow 300 tons 219 Mines: Machinery: Boilers:

Oil fuel: Complement: General

Both built by the Sociadad Española de Construccion Naval. Ferrol. Dual purpose frigates or gunboats and minelayers. Allocated F pennant numbers in 1961. A port quarter view of Eolo, showing minelaying stern, appears in the 1961-62 edition.



1962, A. & J. Pavia

4 "Jupiter" Class

	Pennant No.	Launched	Completed
JUPITER	F 11	14 Sep. 1935	1937
MARTE	F 01	19 June 1936	1937
NEPTUNO	F 02	17 Dec. 1937	1939
VULCANO	F 12	12 Oct. 1935	1937

Displacement: 2,103 tons standard (2,245 tons 2,103 tons standard (2,243 tons full load) 302\(\frac{1}{2}\) (pp.), 328 (o.a.)\(\times 41\)\(\frac{1}{2}\)\(\times 11\)\(\frac{1}{2}\) feet Dimensions:

Jupiter and Vulcano as modernised: 4—3 inch AA. (single, Mk, 26); 4—40 mm., 70 cal. AA. Guns:

AA.
Marte: 4—4-7 inch, 4—2-5 inch,
4—20 mm. AA.
Neptuno: 4—4-7 inch, 4—37
mm. AA., 3—20 mm. AA.
Jupiter and Vulcano have been
modernised with 2 Hedgehogs, 8
mortars, 2 D.C. racks.
Stowage for 264 max., normally
less A/S weapons:

Mines: Machinery:

Stowage for 264 max., normally less
2 Parsons geared turbines, 2 shafts, S.H.P.: 5,000=18.5 kts.
2 Yarrow
280 tons
243 (officially revised figure) Boilers:

Oil fuel: Complement:

General All built by the Sociedad Española de Construccion Naval, Ferrol. Multi-purpose frigates or gunboats and cruising type minelayers. Neptuno is midshipmen's training ship. The modernisation of Jupiter was completed on 28 Oct. 1960, and of Vulcano on 28 Feb. 1961. All allocated F pennant numbers in 1961.

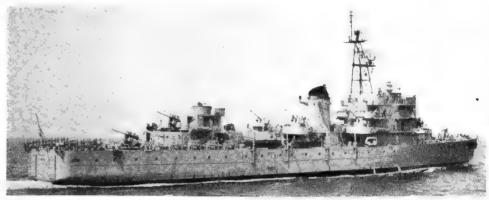
A port broadside view of Neptuno appears in the 1956-57 to 1963-64 editions, a port bow view of Jupiter as modermised in the 1961-62 editions, a port broadside view of Vulcano as modernised in the 1962-63 to 1965-66 editions, and a starboard quarter view of Jupiter in the 1964-65 and 1965-66 editions.

The frigate Canovas del Castillo was stricken from the list in 1959, and the larger frigate Calvo Sotelo (ex-Zacatecas) in 1957



NEPTUNO (four 4.7 inch, pole mast)

1966. courtesy Professor Alfredo Aguilera



VULCANO (four 3 inch, lattice mast)

1966, Spanish Navy, Official

6 "Atrevida" Class

Displacement:	997 tons standard (1,135 tons
	full load) officially revised
	figures
Dimensions:	2473 (o.a.)×331×9 feet
Guns:	Descubierta: 1-4-1 inch 45 cal
	AA. 4-37 mm. 80 cal. AA.
	Remainder, as modernised: 1-3
	inch, 50 cal. Mk. 26; 3-40
	mm., 70 cal. AA
A/S weapons:	Descubierta: 4 D.C.T.

Descubierta: 4 D.C.T.
Remainder, as modernised: 2
Hedgehogs, 8 mortars, 2 D.C.
racks
20 (capacity) can be carried
Sulzer diesels. 2 shafts: B.H.P.:
3,200=18·5 kts.
100 tons
8,000 miles
132 Mines: Machinery:

Oil fuel: Radius: Complement: General

General
Atrevida commissioned on 19 Aug., 1954. Descubierta in 1955. With the exception of Descubierta all have been modernised since 1959. Princesa was delivered on 3 Oct. 1959. Nautilus on 15 Dec., 1959. Diana on 13 May 1960. Atrevida on 14 June 1960 and Villa de Bilbao on 2 July 1960. Allocated F pennant numbers in 1961.

Photographs
A photograph of Descubierta appears in the 1955.56

A photograph of Descubierta appears in the 1955-56 to 1959-60 editions, of Diana rearmed with lattice mast in the 1960-61 edition, and of Villa de Bilbao as modernised in the 1961-62 to 1965-66 editions.

CORVETTES (Corbetas)

*	No.	Laia aown	Launchea	Completea
ATREVIDA	F 61	26 June 1950	2 Dec. 1952	19 Aug. 1954
DESCUBIERTA	F 51	26 June 1950	9 June 1952	l Feb. 1955
DIANA	F 63	27 July 1953	29. Apr. 1955	13 May 1960
NAUTILUS	F 64	27 July 1953	23 Aug. 1956	15 Dec. 1959
PRINCESA	F 62	18 Mar. 1953	31 Mar. 1956	3 Oct. 1959
VILLA DE BILBAO	F 65	18 Mar. 1953	19 Feb. 1958	2 July 1960



PRINCESA

1966, Spanish Navy, Official

FLEET MINESWEEPERS (Dragaminas)

7 "Almanzora" Class

	No.	Builders	Launched	Completed	Modernised
ALMANZORA	M 14	Cartagena	27 July 1953	Nov. 1954	20 May 1960
EO	M 17	Cadiz	22 Sep. 1953	Mar 1955	22 Mar. 1961
EUME	M 13	Cartagena	27 July 1953	Dec. 1953	20 July 1960
GUADALHORCE	M 16	Cartagena	18 Feb. 1953	Dec. 1953	18 Feb. 1960
GUARDIARO	M 11	Cartagena	26 June 1950	Apr. 1953	14 Dec. 1959
NAVIA	M 15	Cadiz	28 July 1953	Mar. 1955	22 Nov. 1960
TINTO	M 12	Cartagena	26 June 1950	May 1953	28 July 1959

Displacement: Dimensions:

Guns:

671 tons standard (770 tons full load)
243\(\frac{1}{2}\times 33\(\frac{1}{2}\times 12\) \(\left(max.)\)
2—20 mm. AA.
Triple expansion and exhaust turbines. 2 shafts. H.P.:
2,400=16 kts.
2 Yarrow
90 tons
2,000 miles at 6 kts. Machinery:

Boilers: Oil fuel:

Radius: Complement: 2,000 miles at 6 kts.

Former Pennant Nos. were DM 11, 13, 10, 14, 8, 12, 9, respectively. Allocated new M Pennant Nos. in 1961. Until modernisation the armament also included 1—3·5 inch gun and 1—37 mm. AA, gun.



ALMANZORA

1964, Empresa Nacioani Bazan

6 "Bidasoa" Class

	No.	Bui ders	Launched	Completed
BIDASOA	M 01	Cartagena	15 Sep. 1943	5 Apr. 1946
LEREZ	M 03	Cartagena	21 Dec. 1944	12 Feb. 1947
NERVION	M 02	Cartagena	15 Apr. 1944	4 June 1946
SEGURA	M 05	Cartagena	6 Oct. 1948	20 Dec. 1948
TAMBRE	M 04	El Ferrol	18 Oct. 1944	21 July 1946
TER	M 06	Cartagena	18 Feb. 1948	22 July 1948

Displacement: Dimensions:

Guns:

555 tons standard (470 tons full load)
200½×28×12 (max.) feet
1—4-1 inch, 1—37 mm. AA., 2—20 mm. AA.
Triple expansion and exhaust turbines. 2 shafts, H.P.:
2,400=16-5 kts.
2 Yarrow
135 tons Machinery:

Oil fuel: 135 tons

Radius 1,060 at 10 kts. Complement:

General General
German M-Boote 40 type. Named after rivers. Formerly carried pennant numbers
DM 1, 5, 3, 2, 6, 4, 7, respectively. Allocated new M permant numbers in 1961.
Guadalete, of this class, which was employed as a coastguard vessel, sank in a gale 20 miles east of Gibraltar on 25 Mar. 1954.



BIDASOA

1964, Spanish Navy, Official

LANDING CRAFT

3 New Construction. "EDIC" Type

Displacement: Dimensions: Guns:

279 tons standard (665 tons full load)
193\\39\x10\\ feet
2--20 mm. AA.
2 diesels. B.H.P.: 1,040=9.5 kts. Machinery:

Complement:

Landing craft of the French EDIC type under construction at La Carraca.

PATROL BOAT

CABO FRADERA

25 tons standard (28 tons full load) $58\frac{1}{2}\times14\times5\frac{1}{3}$ feet 2 diesels. B.H.P.: 760=12 kts. Displacement:

Dimensions:

Machinery: Complement:

General

Built at La Carraca, in 1963. (River patrol boat Cabo Fradera was disposed of).

PATROL VESSELS (Patrulleros)

I Ex-U.S. PC Type

JAVIER QUIROGA (ex-Blue Arrow, ex-U.S.S. PC 1211)

362 tons standard (440 tons full load) 170 (w.f.), 172 $\frac{3}{2}$ (o.a.) \times 23 \times 10 $\frac{3}{4}$ feet 2—37 mm, Displacement: Dimensions: Guns: Machinery: 2 diesels. 2 shafts. B.H.P.: 3,500=20 kts.

General

General
Former U.S. submarine chaser of the "173 ft." steel type. Built by Luders
Marine Construction Co., Stamford, Conn. Laid down on 11 Aug. 1942, launched
on 12 Mar. 1943, and completed on 16 Aug. 1943. Transferred on 24 Oct. 1956.



IAVIER OLUROGA

1966, Spanish Navy, Official

I Ex-U.S. SC Type

CANDIDO PEREZ (ex-SC 679)

108 tons standard (138 tons full load)
107½ (wl.), 111 (o.a.)×19×7 feet
1—40 mm. AA., 3—20 mm.
2 D.C.T.
G.M. diesels. 2 shafts. B.H.P.: 1,000=15·6 kts.
2,300 miles Displacement: Dimensions:

Guns: A/S weapons: Machinery: Radius:

General Former United States submarine chaser of the "110 ft." wooden type. Built by Walter E. Abrams Shipyard, Inc. Laid down on 4 Mar. 1942. Launched on 29 Aug. 1942. Completed on 19 Dec. 1942. Transferred to Spain in 1957.



CANDIDO PEREZ

1966, Spanish Navy, Official

COASTAL MINESWEEPERS

DUERO (ex-Spoonbill, MSC 202) EBRO (ex-MSC 269) GENIL (ex-MSC 279) JUCAR (ex-AMS 220)

Dimensions:

Radius:

Displacement:

355 tons standard (384 tons full load) 138 (pp.), 144 (o.a.)×27½×8 feet 1—20 mm, AA. 2 diesels. 2 shafts, B.H.P.: 900=14 kts. 30 tons

Guns: Machinery: Oil fuel: 2,700 miles at 10 kts. Complement:

Anti-magnetic minesweepers transferred from the U.S.A. Nalón on 16 Feb. 1954 Anti-magnetic minesweepers transferred from the U.S.A. Nalon on 16 Feb. 1954, Llobragart on 5 Nov. 1954. Turia on 1 June 1955. Jucar on 22 June, 1956: Ulla on 24 July, 1956; Miño on 25 Oct. 1956, Redwing and Spoonbill on 16 June 1959, Ebro on 19 Dec. 1958, Genil on 11 Sep. 1959, Tajo on 9 July, 1959 and Odiel, 9, Oct. 1959. Pennant Nos. M. 28 Duero, M 26 Ebro, M 31, Genil, M 23 Jucar, M 22, Llobregat, M 25 Miño, M 21, Nalón, M 32 Odiel, M 29 Sil, M 30 Tojo, M 27 Turio M 24 Ulla.



ULLA

1962. A. & J. Pavia

MOTOR TORPEDO BOATS (Lanchas Torpederas)

LT 30 Displacement: LT 31

Dimensions:

100 tons standard (116 tons full load) $114\times16\frac{2}{3}\times5$ feet 1—20 mm. AA.

Guns: Tuber

Machinery: Oil fuel;

2-21 inch 3 diesel. 3 shafts. B.H.P.: 7,500-41 kts.

Radine

20 tons 650 miles at 30 kts.

General Complement:

General
Built at La Carraca, Cadiz, to the design of Lurssens of Bremen, LT 31 was commissioned on 21 July 1956. L 32 was launched in 1956.
LT 27, LT 28 and LT 29 were removed from the effective list in 1963. Of the six ex-German motor torpedo boats of the S 100 class, LT 24 and LT 25 were discarded in 1955, LT 21, LT 22 and LT 23 in 1956, and LT 26 in 1958.



LT 32

1960, Spanish Navy, Official

LANDING SHIPS (Borcazas de Desembarco)

LSM 1 (ex-U.S.S. LSM 329) LSM 2 (ex-U.S.S. LSM 331) LSM 3 (ex-U.S.S. LSM 343)

Displacement: Dimensions: Guns: Machinery:

930 tons standard (1,094 tons full load)
196½ (w.l.), 203½ (o.a.)×34½×8¾ feet
1—40 mm, AA., 2—20 mm. AA.
2 diesels. 2 shafts. B.H.P.: 3,600=12·5 kts.

Complement:

Medium landing ships transferred at Bremerton, Washington, on 25 Mar. 1960.



LSM 2

1965, Spanish Navy Official

Construction

К 1

к 2 Displacement:

K 3 K 4 481 tons standard (868 tons full load) $187 \times 38\frac{1}{4} \times 5\frac{1}{2}$ feet 2 diesels. B,H.P.: 1,000=7 kts.

Machinery: General

Built by Bazan, Ferrol Of British LCT (4) Type, (There are also 13 LCMs (Lanchas de Desembarco) numbered LCM 1 to LCM 13, and 5 LCPs numbered LCP 1 to LCP 5.)

SURVEYING VESSELS (Buques Hydrografos)

MALASPINA (ex-Bausa)

TOFIÑO

Displacement: Dimensions:

Guns: Machinery:

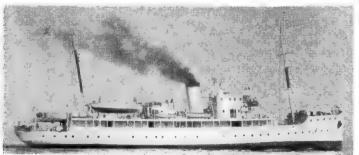
998 tons standard (1,255 tons full load)
224\pmu/35\pmu/11 feet
1-37 mm,
Triple expansion. 2 shafts. I.H.P.; 810=12.5 kts.

Boilers: Fuel:

Yarrow 190 tons

Complement:

Built by Matagorda, Cadiz and Ferrol, respectively. Launched on 13 Sep. 193 21 Aug. 1933. Photograph of Malaspina in the 1957-58 to 1964-65 editions.



TOFINO

1965, Spanish Navy, Official

H 3

IUAN DE LA COSA (ex-Artobro)
Displacement: 770 to
Dimensions: 188×3

770 tons standard (1,100 tons full load)

188×35½×8å feet

B. & W. diesels, electrict drive, B.H.P.: 500=9 kts. Machinery: Valence, Launched in 1935. Carries one aircraft. Photograph in

Built by U.N.L., Valence, Laur the 1950-51 to 1957-58 editions. H 2

Dimensions:

221 tons standard (281 tons full load) $100\times20\times9$ feet

Machinery: triple expansion. I.H.P.: 200

General

General

Launches employed as survey tenders. Sister ship H 1 was stricken off in 1952.

TRANSPORTS

ALMIRANTE LOBO (ex-Torrelaguna)

Displacement;

Dimensions: Guns:

18-680 tons standard (8,038 tons full load) 362½×48½×253 feet 2—37 mm., 60 cal. 1 triple expansion, I.H.P.: 2,000=12 kts.

Ex-cargo vessel. Built at Astilleros Echevarrieta, Cadiz. Commissioned 4 Oct. 1954.



ALMIRANTE LOBO

Guns:

Boilers:

1964, Spanish Navy, Officia

ARAGON TA 11 (ex-U.S.S. Noble, APA 218)

Displacement: Dimensions:

6,720 tons light (tons full load)
436½ (w.l.), 455 (o.a.)×63½×24 (
Geared turbines. S.H.P.: 8,500=17
2 Babcock & Wilcox

Machinery:

General Former U.S. Attack Transport, transferred at San Francisco on 19 Dec. 1964.

CASTILLA TA 21 (ex-U.S.S. Achernar, AKA 53)

7,430 tons light (11,416 tons full load)
435 (w.l.), 457\frac{1}{2} (o.a.)\times 63\times 24 feet
1—5 inch, 38 cal.; 8—40 mm., 60 cal.
2 G.E. geared turbines. S.H.P.: 12,000=16 kts.
2 Foster-Wheeler Displacement: Dimensions: Machinery:

Former U.S. Attack Cargo Ship, transferred at New York on 2 Feb. 1965.



CASTILLA

1966, courtesy Professor Alfredo Aguilera

SERVIOLA

VESSELS (Guardacostas)

CENTINELA

K 5

Displacement: Dimensions:

255 tons standard (282 tons full load)

 $\begin{array}{lll} 117\frac{1}{2}\times22\frac{1}{2}\times9\frac{1}{3} & \text{feet} \\ 2-37 & \text{mm} \\ 1 & \text{diesel. B.H.P.: } 430=12 & \text{kts.} \end{array}$

Machinery:

General
Completed at Ferrol, in 1953, Rated as Fishery Protection Vessels (Guardapescas).

PEGASO

Complement:

Guns:

Displacement: Dimensions: 436 tons standard (498 tons full load)
137½×27×9½ feet
2—20 mm. AA.
1 shaft. B.H.P.: 532=12 kts.
66 tons
3,500 miles at 9 kts.

Guns: Machinery:

Oil fuel: Radius:

Both commissioned at Cartegena in Jan. 1951. Rated as Coastguard Vessels (Guardocostas). Photograph of Pegaso in the 1961-62 to 1965-66 editions.



PROCYON

1966, Spanish Navy, Official

SALVORA

General

AZOR

Displacement: 180 tons standard (275 tons full load)

Dimensions: Guns:

107×20½×9 feet 1 M.G.

1 Sulzer diesel. B.H.P.: 400=12 kts Purchased in Dec. 1952. Rated as Fishery Protection Vessels (Guardapescas)

Displacement: Dimensions: Machinery:

442 tons standard (486 tons full load) $153\times25\frac{1}{4}\times12\frac{1}{2}$ feet 2 diesels, B.H.P.; 1,200=12 kts.

Rated as a Fishery Protection Launch (Lancha Guardapescas). Used as the Caudillo's yacht.

Patrol Vessels-contd.

ARCILA (ex-William Doak)

XAUEN (ex-Henry Cramwell)

Displacement: Dimensions: Guns: Machinery:

462 tons standard (692 tons full load)
138\(\frac{1}{2}\) (pp.), 148\(\frac{1}{2}\) (o.a.)\(\times 23\)\(\frac{1}{2}\)\(\frac{1}{2}\) (pf. (Ac.))
2-3 inch (Xaen. 1-3 inch, 1-47 mm, AA.)
1.H.P.: 500=10 kts.

Coal: Complement: 200 tons

General

"Mersey" type trawlers, Launched in 1918 by Goole S.B. & Rep. Co., and Lobnitz. Arcila is rated as a guardcosta and Xauen as an oceanagraphicos.

UAD KERT (ex-Rother, ex-Anthony Aslett)

649 tons standard (752 tons full load)
130 (pp.)×23½×15½ feet
1—3 inch
1.H.P.: 500=9·5 kts. Displacement:

Dimensions: Guns:

Machinery: 200 tons Coal:

Complement:

Built by Cochrane & Sons Ltd., Selby. Launched in 1917. "Special" type trawler.

BOOM DEFENCE VESSEL (Cola-Redes)

CR 1 (ex-G 6)

Displacement:

Dimensions: Guns:

630 tons standard (831 tons full load) $165\frac{1}{2}\times34\times10\frac{1}{2}$ feet 1-40 mm, AA. 1-20 mm. AA. 2 diesels with electrict drive. B.H.P.: 1,500=12 kts. Machinery:

Built by Penhoët, France, as a U.S. off-shore' order. Launched on 28 Sep. 1954. Transferred from the U.S. in 1955 under the Mutual Defense Assistance Programme.



CR 1

OILERS

TEIDE

2,747 tons light (8.030 tons full load) $385\frac{1}{2}\times 48\frac{1}{2}\times 20\frac{1}{3}$ feet $1-4\cdot 1$ inch Displacement:

Dimensions: Guns:

2 diesels, B.H.P.: 3,360=12 kts. Machinery:

Construction
Ordered from Factoria de Bazan, Cartagena, in December 1952. Laid down on 11
Nov. 1954. Launched on 20 June 1955. In service October 1956.



1963, Spanish Navy, Official

PLUTON (ex-Cambilo)

Displacement-

4,550 tons light (7,550 tons full load) $342\frac{1}{2}\times53\frac{1}{2}\times19\frac{1}{2}$ feet 2 sets B. & W. diesels. B.H.P.: 2,600=13·5 kts. Machinery:

General Built at Valencia. Diesels built at Barcelona. Launched in 1931. Purchased in Dec. 1934. A photograph appears in the 1954-55 to 1961-62 editions. PP 2

Displacement: Dimensions:

470 tons 138 (pp.), $147\frac{1}{2}$ (o.a.) $\times 25 \times 9\frac{1}{2}$ fe Deutz diesel. B.H.P.: 220=10 kts. 12 Machinery Complement:

Both built at Santander and launched in 1939. Small service tankers.

AUXILIARY PATROL VESSELS

RR 10

RR 19

RR 20

RR 28

GIHAD

Displacement:

Dimensions:

364 tons standard (498 tons full load)
124×29×10 feet
1—47 mm., 1—20 mm. AA.
Triple expansion. 1 shafts: 1.H.P.; 800=11·5 kts. Machinery: Coal: 200 tons 620 miles at 10 kts. Radius:

General

Former tugs. All launched in 1941-42. Now patrol vessels. A photograph appears in the 1957-58 edition.

TRAINING SHIP (Buque-Escuela)

IUAN SEBASTIAN DE ELCANO

Guns

3,420 tons standard (3,754 tons full load)
269½ (pp.), 308½ (o.a.)×43×23 feet (full load)
2—37 mm.
1 Sulzer diesel. 1 shaft. B.H.P.; 1,500=9·5 kts. Displacement: Dimensions:

Machinery; Oil fuel;

230 tons 10,000 miles at 9.5 kts. 224+80 Cadets Endurance:

General
Four-masted schooner. Named after the first circumnavigator of the world (1519-26) who succeeded to the command of the expedition led by Magallanes after the latter's death. Built by Echevarrieta Yard, Cadiz. Launched on 5 Mar. 1927. Completed in 1928. A photograph appears in the 1952-53 to 1957-58 editions.

Disposal The ti The training ship (Galatea (ex-Clarastella), latterly used as a store ship, was removed from the list in 1961.

COASTAL LAUNCHES (Lanchas de Vigilancia)

ı	٧	2	Displacement:		Guns: 1—7 mm.	Speed: 6:7 kts.
ı	V	3	Displacement:	10 tons.	Guns: 1—7 mm.	Speed: 7.5 kts.
-	٧	4	Displacement:	65 tons.	Guns: 1—7 mm.	Speed: 9 kts.
1	V	5	Displacement:	4.5 tons.	Guns: 17 mm.	Speed: 5 kts.
	V	7	Displacement:		Guns: 1—7 mm.	Speed: 8.5 kts.
	V	8	Displacement:	26.5 tons.	Guns: 1-7 mm.	Speed: 7.8 kts.
Ì	V	9	Displacement:	15.6 tons.	Guns: 1-7 mm.	Speed: 9 kts.
	V	16	Displacement:	11:69 tons.	Guns: 1—7 mm.	Speed: 9.5 kts.
	Ý	11	Displacement:		Guns: 1—7 mm.	Speed: 9.5 kts.
ı	l v	12	Displacement:	28 tons.	Guns: 1-7 mm.	Speed: 7-8 kts.
		13	Displacement:		Guns: 1-7 mm.	Speed: 7.8 kts.
	V	17	Displacement:	110.9 tons.	Guns: 1-13 mm.	Speed: 10:5 kts.
	٧	18	Displacement:		Guns: 1—13 mm.	Speed: 6 kts.
	٧	21	Displacement:	16 tons.	Guns: 1-13 mm.	Speed: 17.6 kts.
	10	naral				

There are also V 1 and V 6. Coastal launches employed on surveillance and fishery protection duties, lanchos guardapescas, except V 17, rated as patrullero. V 4 is named Alcatraz, V 12 Esturian and V 18 Lanzon, V 19 was officially stricken from the list in 1963, and V 20 in 1965.

TUGS (Remolcadores)

RR 52

RA 6

DA 2

RR 50

RR 51

227 tons 91½×23×11 feet

Dimensions: Machinery: 1 shaft, S.H.P.: 1,400

It is officially stated that these tugs are being built at Cartagena.

RA 4

RA 5

951 tons standard (1,069 tons full load) $183\frac{1}{2}\times32\frac{1}{4}\times15\frac{1}{4}$ feet 2 Sulzer diesels. B.H.P.: 3,200=15 kts. Displacement: Dimensions:

Machinery:

Construction All built at La Carraca, in 1963

Displacement:

RA 1

RR 11

Displacement:

Dimensions:

Guns:

757 tons standard (1,039 tons full load) 184×33½×12 feet 2 M.G.
2 Sulzer diesels. B.H.P.: 3,200=15 kts. General Machinery:

General
Ordered in 1949. Built at Factoria de Bazan, Cartagena. Launched on 2 Sep. 1 and 5 Oct. 1954, commissioned on 9 July 1955 and 12 Sep. 1955, respectively.

RS 3 (ex-Metinda III)
Displacement: 762 tons standard (1,080 tons full load)

Dimensions: $137\times33\frac{1}{8}\times15\frac{1}{2}$ feet Triple expansion, 12 kts. (max.) 10 kts. (service) Machinery:

General

Purchased in Great Britain. RA 3 (ex-Argos), was deleted from the list in 1962. RR 15 RR 16 RR 17 Displacement:

434 tons 124×27½×10 feet 1.H.P.: 800=11.5 kts. Dimensions: Machinery:

Displacement:

279 tons 111½×20×—feet 1.H.P.: 600=11 kts. Machinery:

osals
R 14 (ex-Gaditano, ex-HS 82) was removed from the effective list in 1963.

SUDAN

The Navy was established in 1962, to guard the Red Sea coast.

PATROL BOATS

HORRIYA PB 2 ISTIGLAL PB 3 SHAAB PB 4 GIHAD PB 1

Displacement: Dimensions: Guns:

100 tons
115×16½×5½ feet
1—40 mm. AA., 1—20 mm. AA., 2—7.6 mm. M.G.
Mercedes Benz diesels. 2 shafts. B.H.P.: 1,800=20 kts.
1,400 miles
20 officers and men. Machinery: Radius: Complement:

Built by Mosor Shipyard, Trogir, Yugoslavia, in 1961-62. Of steel construction. First craft acquired by the newly established Sudanese Navy. A photograph of Horriya, Istigial and Shaab in company appears in the 1962-63 to 1965-66 editions.



1966, Sudan Navy, Official

ROYAL SWEDISH NAVY

Administration

Commander-in-Chief of the Navy (including Coast Artillery): Vice-Admiral A. F. Lindemalm.

President of the Navy Technical and Administrative Board: Rear-Admiral A. H. S. Lagerman.

Commander-in-Chief of Active Fleet: Rear-Admiral D. Arvas.

Naval Attaché in London: Commodore Ulf Reinius.

Naval Attaché in Washington: Captain N. G. Gynning

New Construction Programme

- Plan "ÖB—62" comprises:—
 2 Guided Missile Frigates (ship-to-air)
 10 Submarines

 - 12 Motor Torpedo Boats (T 121 type)
 20 Motor Gunboats
 9 Coastal Minesweepers (M 69 type)

Personnel

1966: Active List of Navy and Coast Artillery, 15,200 officers and men, including conscripts,

Navy Estimates

1960-61: 389,500,000 kr. 1963-64: 469,000,000 kr. 1961-62: 409,000,000 kr. 1964-65: 490,250,000 kr. 1962-63: 423,000,000 kr. 1965-66: 532,770,000 kr.

Mercantile Marine

Lloyd's Register of Shipping: 1,123 vessels of 4,290,103 tons gross

Silhouettes

Scale: 150 feet=1 inch.





ÖSTERGÖTLAND Class



HALLAND Class



ÖLAND



VISBY Class



MALMÖ



UPPLAND



GÄVLE



MJÖLNER Class



KALMAR



NORRKÖPING



ÄLVSNABBEN

New Construction 5 "Sjöormen" Class

SJÖORMEN

SJÖBJÖRNEN SJOHASTEN

SJÖHUNDEN SJÖLEJONET

Displacement:

700 tons standard, 800 tons surface, 1,100 tons submerged

Tubes:

face, 1,100 tons submer 21 inch Diesels, Electric motors.

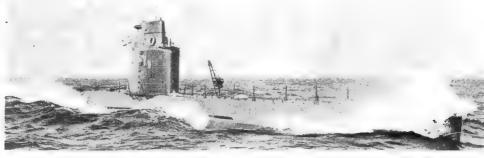
General

Three building by Kockums, two by Karlskrona (now a civilian yard). Sjöbjörnen means Seabear, Sjöormen Seaserpent, Sjöhästen Seahorse, Sjöhunden Seadog, and Sjölejonet Sealion.

Spoint Seation.

Five more submarines of a new highly streamlined, long-range type, are included in the new construction programme. They will be conventional but with engines enabling them to stay submerged for a long time.

SUBMARINES



VARGEN

1965, Royal Swedish Navy, Official

6 "Draken" Class

Builders Launched Completed
 Karlskrona
 7
 Mar.
 61
 7
 June
 62

 Kockums
 1
 Apr.
 60
 4
 Apr.
 62

 Karlskrona
 31
 May
 60
 28
 Apr.
 62

 Kockums
 8
 Mar.
 61
 4
 Apr.
 62

 Kockums
 31
 Aug.
 61
 7
 Nov.
 62

 Kockums
 20
 May
 60
 15
 Nov.
 61
 DELFINEN DRAKEN GRIPEN NORDKAPAREN **SPRINGAREN** VARGEN

Displacement:

770 tons standard, 835 tons sur-

Dimensions: Tubes: Machinery:

fore $227\frac{1}{2}\times15\frac{1}{2}\times14\frac{1}{4}$ feet 21 inch Speed $16\frac{1}{4}$ kts. surface 25 kts. submerged

General
These six submarines have fast-diving capabilities.
Nomenclature
Draken means Dragon, Gripen Griffon, Vargen Wolf.

Appearance

Photographs
A photograph of Draken appears in the 1962-63 to 1964-65 editions.

Distinctive letters painted on the conning tower are: De. Delfinen; Dk. Draken, Gr.Gripen, Nd, Nordkaparen; Sp. Springaren, Vg. Vargen.

6 "Hajen" Class

BAYERN Kockums HAJEN Karlskron: ILLERN Kockums SALEN Kockums VALEN Kockums VALEN Kockums	Launched 11 Dec. 1954 21 Apr. 1955 3 Oct. 1955 14 Nov. 1957 3 Feb. 1958 14 Nov. 1957	1957
--	--	------

Displacement:

720 tons standard, 785 tons sur-

Dimensions:

Guns: Tubes: Machinery:

720 tons standing face 216 \\ ×16 \\ ×19 \\ \ 1 = 20 mm. AA. 4—21 inch. bow (8 torpedoes) SEMT Pielstick diesels. Electric

motors 44

Complement: General

Generoi All built by Kockums Mekaniska Verkstads Aktiebolag, Malmö, except Valen built by the Royal Swedish Naval Dockyard, Karlskrona.

Operational Equipped with Schnorkel, and have fast-diving capabilities.

Nomenclature Bävern means Beaver, Hojen Shark,, Illern Polecat, Sälen Seal, Uttern Otter and Valen Whale.

Distinctive letters painted on the conning tower are: Bv. Bövern, Hj, Hajen, In, Illern; Sā, Sälen; Ut, Uttern; Va, Valen.

A photograph of Hajen appears in the 1957-58 to 1959-60 editions, and of Bävern in the 1960-61 to 1965-66 editions.

UTTERN

1966, Royal Swedish Navy, Official



ILLERN

1964, Royal Swedish Navy, Official

3 "Najad" Class

Displacement:

Dimensions: Tubes: Mines: Machinery:

550 tons standard, 600 tons surrace, 720 tons submerged 200×20½×11½ feet 4—21 inch (3 bow, 1 stern) 20. Fitted for minelaying 2 Diesels. 2 shafts. B.H.P.: 3,000 =16 kts. surface; 2 electric motors. H.P.: 2,000=10 kts.

submerged 32

Complement:

All provided under the 1938 programme. These three minelaying submarines were all built by Kockums Mek-aniska Verkstads Aktiebolag, Malmö.

Nomenclature

Näcken means Neck, Najad Naiad, and Neptun Neptune.

Appearance

Distinctive letters painted on conning tower are: Nā, Näcken; Nj, Najad; Np, Neptun.

Photographs

A photograph of Neptun appears in the 1952-53 to 1959-60 editions.

Disposals

Of the nine old submarines of the "Sjölejonet class.

Dykaren (Diver), Sjöborren (Seaurchin), Sjöhunden (Seadog), Sjölejanet (Sealion) and Svärdfisken (Sword-

NACKEN NAIAD NEPTUN

Builders Kockums Malmö Kockums Malmö Kockums Malmö

Feb. Mar.

Laid down

26 Sep. 1942 26 Sep. 1942 17 Nov. 1942

Launched

May 1943



NACKEN!

sh) were stricken in 1960 and scrapped. (Seaserpent) and Tumlaren (Porpoise) were discarded Sjöbjörnen (Seabear), Sjöhästen (Seahorse), Sjöormen on 1 Jan. 1964, it is officially stated.

Royal Swedish Navy, Official

Submarines—contd.

"Abborren" Class

ABBORREN (ex-U5) MAKRILLEN (ex-U9) FORELLEN (ex-U4)

LAXEN (ex-U8) GÄDDAN (ex-U7) SIKEN (ex-U6)

Displacement:

Dimensions: Tubes: Machinery:

420 tons standard, 430 tons suface, 460 tons submerged (officially revised figures) 164×17½×17½ feet 4—21 inch (3 bow, 1 stern) 2 MAN diesels, B.H.P.: 1,500=14 kts. surface, Electric motor. H.P.: 750=9 kts. submerged 23

Complement:

General
All were built by Kockums Mek, Verkstads, Malmö (U 4, 5 June 1943, U 5, 8 July 1963, U 6, 18 Aug. 1943, U 7, 23 Nov. 1943), and by Karlskrona Naval Dockyard (U 8, 25 Apr. 1944, U 9, 23 May 1944) (original launch dates) Reconstructed in 1960-64, Launching dates after reconstruction: Abborren 1962,

Makrillen 1963, Forellen 1963, Laxen 1964, Gaddan 1963, Siken 1964, All have been streamlined. Officially rated as kustubåtar (coastal submarines).

Disposals
Of three sister boats, U 1 was scrapped in 1961, U 2 was for sale in 1962, and U 3 in 1964.

1965, Royal Swedish Navy, Official



LAXEN

I Ex-British "Midget" Type

SPIGGEN (ex-Stickleback, X 51)

Displacement:

36 tons surface, 41 tons sub-Dimensions:

Machinery:

50% (pp.), 53% (o.a.) 6½×7½ feet Perkins 6-cyl diesels. 7 kts. surface. Electric motors 6 kts. submerged 5

Complement:

Complement: 5
General
Former British X-craft. Built by Vickers-Armstrongs
Ltd., Barrow. Launched on 1 Oct. 1954. Refitted in
1957-58. Purchased by the Swedish Government. Transferred from Great Britain to Sweden on 15 July 1958.
"Spiggen" is actually the Swedish equivalent of
"Stickleback".



SPIGGEN

1966, Royal Swedish Navy, Official

CRUISERS (Kryssare)

I "Tre Kronor" Class

Displacement:

Dimensions:

8,200 tons standard designed (9,200 tons full load)
Length: 571 (pp.), 590½ (w.l.), 597 (o.a.) feet. Beam: 54 feet. Draught: 19½ (mean), 21½ (max.) feet
7.—6 inch, 53 cal. Bofors AA, 4—57 mm. Bofors AA, 6—21 inch D.C.T. Exceptionally strong, 3"-5" side 2 sets De Laval geared turbines. 2 shafts. S.H.P.: 100,000=33 kts.

Guns:

Tubes: Armour: Machinery:

kts. 4 Swedish 4-drum type 610 Boilers:

Complement:

General
Cost was estimated at 74,000,000 kromor. Radar control arrangements were installed for 6-inch guns. Fitted for minelaying with a capacity of 120 mines. Reconstructed in 1951-52. Modernised in 1958, with new radar, 57 mm. guns, etc.

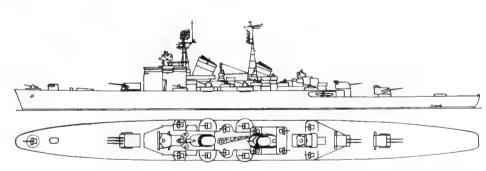
Gunnery
The 6-inch guns are high angle automatic anti-aircraft weapons with an elevation of 70 degrees. The 9-25 mm. AA, formerly mounted were suppressed in 1951 and 7-40 mm. AA, added,

GÖTA LEION

Builders Eriksberg Mekaniska Verkstad, Göteborg Laid down 27 Sep. 1943

Launched 17 Nov. 1945

Completed 15 Dec. 1947



Drawing
Port elevation and plan. Scale: 128 feet=1 inch.

Appearance
Light tripod masts have been stepped as shown in photo. Enclosed tower bridge structure.

Disposals
Sister ship Tre Kronor was discarded on 1 Jan. 1964, The old anti-aircraft cruiser Gotland was sold in 1961.



GÖTA LEION

1966, Royal Swedish Navy, Official

4 "Östergötland" Class

Displacement:

Dimensions:

2,150 tons standard (2,600 tons full load)
367½ (pp.), 380 (o.a.)×36½×
12 feet
4—4-7 inch, Östergötland 7—40
mm. AA. Hälsingland 5—40
mm. AA., others 4—40 mm. AA.
Gästrikland and Södermanland have "Seacat"
6—21 inch
Triple-barrelled depth charge mortar Guns: Guided weapons:

Tubes:

A/S weapons:

Triple-barrelled depth chargemortar
60 (capacity) can be carried
De Laval turbines: 2 shafts.
5.H.P.: 40,000=35 kts.
2 Babcock & Wilcox
330 tons
2,200 miles at 20 kts. Mines: Machinery: Boilers: Oil fuel: Radius:

Complement: General

General
These ships have improved anti-aircraft defence and anti-submarine weapons of the Bofors type.
Södermanland was modernised in 1962, and Gästrik-land and Östergötland in 1963.

Photographs
A photograph of Gästrikland appears in the 1959-60 to 1964-65 editions, and of Östergötland in the 1962-63 to 1965-66 editions.

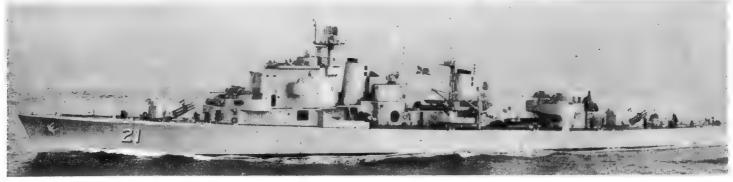
DESTROYERS (Jagare)

Name	No.	Builders	Laid down	Launched	Completed
GÄSTRIKLAND HÄLSINGLAND ÖSTERGÖTLAND SÖDERMANLAND	22 23 20 21	Götaverken, Göteborg Kockums Mek. Verkstads A/B Götaverken, Göteborg Eriksberg Mekaniska Verkstad	1 Oct. 1955 1 Oct. 1959 1 Sep. 1955 1 June 1955	6 June 1956 14 Jan. 1957 8 May 1956 28 May 1956	17 June 1959 3 Mar 1958



HALSINGLAND

1965, Royal Swedish Navy, Official



SÖDERMANLAND

1966, Skyfotos

2 "Halland" Class

2.650 tons standard (3,200 tons full load)
380\(\frac{1}{2}\) (w.l.), 397\(\frac{1}{6}\) (o.a.)\times41\times 14\(\frac{1}{2}\) feet
4—4.7 inch AA., 2—57 mm.
AA., 6—40 mm. AA.
8—21 inch.
1 rocket launcher
2 four-barrelled depth charge mortars
Can be fitted for minelaying
De Laval double reduction geared turbines. 2 shafts. S.H.P.: 58,000
=35 kts.
2
500 tons Dimensions:

Guns: Tubes:

Guided weapons: A/S weapons:

Boilers:

500 tons 3,000 miles at 20 kts. 290 Oil fuel: Radius:

Complement:

General

Both ordered in 1948. The first Swedish destroyers of post-war design and construction. These large destroyers have fully automatic gun turrets and ahead throwing anti-submarine weapons of the Bofors type, forward. It is officially stated that they will be equipped with ship-to-ship guided missiles.

Cancellation

Two sister ships, to have been named Lappland and Varmland, were cancelled in 1958.

HALLAND SMALAND

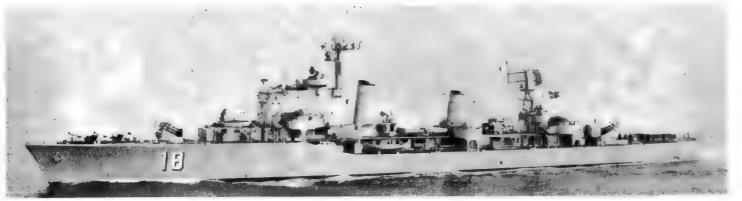
Builders No. Götaverken, Göteborg Eriksberg Mekaniska Verkstad, Göteborg 18 19

Laid down Launched 1951 16 July 1951 23 Oct. 16 July 1952 23 Oct. 1952 Completed 8 June 1955 12 Jan. 1956



SMÁLAND

1966, Royal Swedish Navy, Official



1966, Skyfotos

Destroyers—contd.

ÖLAND UPPLAND Pennant No. 16 17

Builders Kockums Mek, Verkstads A/B., Malmö Karlskrona Dockyard

Laid down 1943 1943

Launched 15 Dec. 1945 5 Nov. 1946

Completed 5 Dec 1947 31 Jan. 1949 Modernised 1960 1963

2 "Öland" Class

Displacement:

Dimensions: Guns:

1,990 tons standard (2,400 tons full load)
351 (pp.), 364% (o.a.)×36%×
11% feet
4-4-7 inch (d.p.), 6-40 mm.
AA., 8-20 mm. AA.
6-21 inch (tripled)
60

Tubes:

6— 60

Machinery:

6U
De Laval geared turbines, 2
shafts. S.H.P.: 44,000=35 kts.
2 Penhoët
300 tons
2,500 miles at 20 kts,

Boilers: Oil fuel: Radius:

Complement:

2,50 210



ÖLAND

1966, Royal Swedish Navy, Official

General
The superstructure and machinery spaces are lightly armoured. Fitted for minelaying.

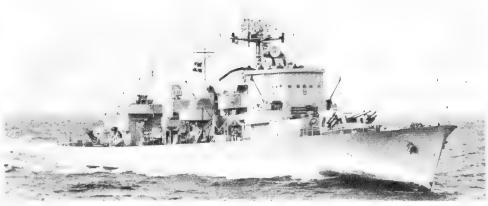
Gunnery .
The 4-7 inch guns are semi-automatic with an elevation of 80 degrees, The 40 mm, AA, gun near the jackstaff was removed in 1962.

Reconstruction

Oland was modernised in 1960 with a new bridge, see photograph above showing her appearance after reconstruction. Uppland was modernised with a new bridge and a helicopter platform in 1963, see new photographs above.

Photographs

Another photograph of Uppland, a port near broad-side view before reconstruction, appears in the 1955-56 to 1961-62 editions, and a starboard bow, near broadside view of Oland in the 1962-63 to 1965-66



UPPLAND

1965, Royal Swedish Navy, Official

FAST ANTI-SUBMARINE FRIGATES (ex-Destroyers) Rated as Fregatter

4 "Goteborg" Class

No. Builders Launched Name Completed GAVLE 80 KARLSKRONA 79 MALMÖ 78 NORRKÖPING 81 Götaverken 25 Sep. Karlskrona 16 June Eriksberg 22 Sep. Eriksberg 5 Sep. 1940 1939 1938 1941 Eriksberg

Displacement: Dimensions:

1,250 tons standard, 1,400 tons full load). Malmö 1,150 tons standard (1,300 tons full load) 304 (w.f.), 310½ (o.a.)×29½ (Malmö 28)×12½ feet 3—47 inch), 4—40 mm.
2 D.C.T. Gävle, Karlskrona, Malmö 2 rocket launchers 6—21 inch (tripled) Gävle and Karlskrona no tubes De Laval geared turbines. 2 shafts. S.H.P.: 32,000=39 kts. 3 Penhoët 150 tons 1,200 miles at 20 kts. 130

A/S weapons:

Guns:

Tubes:

Machinery:

Boilers: Oil fuel: Radius: Complement:

Former torpedo boat destroyers. Originally carried 20 to 60 mines, All refitted for anti-submarine warfare, and officially reclassified as frigates on 1 Jan. 1961.

Reconstruction

Reconstruction

As converted into fast anti-submarine escorts these ships have their close ramge anti-aircraft guns mounted on a bandstand enveloping the after funnel. Gävle was reconstructed in 1961, Malmö in 1962, and Karlskrona in 1963.

Conversion

it was officially stated that the 'Göteborg class would not be radically rebuilt, as it was originally intended, although they have already undergone some modification, bringing them near the frigate type.



KARLSKRONA

1964, Royal Swedish Navy, Official



MALMÖ (as converted with only two 4.7 inch guns)

1963, Royal Swedish Navy, Official

Photographs
A port broadside view of Malmö before reconstruction appears in the 1956-57 to 1960-61 editions, a starboard bow view of Norrköping after reconstruction in the 1957-58 to 1962-63 editions, and a port broadside view of Gävle as converted to fast anti-submarine frigate in the 1959-60 to 1963-64 editions.

Disposals
Sister ship Stockholm was officially discarded on 1 Jan 1964. Göteborg of this class was discarded in 1958,

The old destroyers Ehrensköld and Nordensköld were discarded on 1 Apr. 1963.
The older destroyer Klas Horn was discarded in 1958.

4 "Visby" Class

Name	No.	Bullders	Laur	ched	Co	mpleted
HALSINGBOI KALMAR SUNDSVALL VISBY	RG 13 14 12 11	Götaverken Eriksberg Eriksberg Götaverken	20 20	Mar. July Oct. Oct.	1943 1943 1942 1942	1943 1944 1943 1943

1,150 tons standard (1,320 tons full load)
310 (w.f.), 320 (o.a.)×30×
12\(\frac{1}{2}\) feet
Sundsvall and Visby: 3—4.7
inch, 3—40 mm. AA., 2—20
mm. AA. Displacement: Dimensions:

inch, 3—40 mm. AA., 2—20 mm. AA.

Hälsingborg and Kalmar: 3—4.7 inch, 3—40 mm. AA.

Sundsvall and Visby: 6—21 inch (tripled); Hälsingborg and Kalmar: 5—21 inch (quintupled)

D.C.T.

De Laval geared turbine, 2 shafts, S.H.P.: 36,000=39 kts.

3, of 3-drum type
150 tons
1,600 miles at 20 kts. A/S weapons: Machinery:

Boilers: Oil fuel: Radius: Complement:

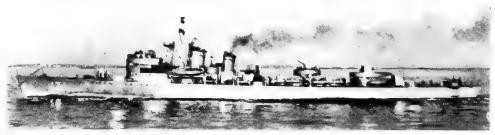
General

Tubes:

Former destroyers, Kalmar was laid down on 16 Nov. 1942, and Visby on 29 Apr. 1942. All were originally fitted for minelaying.

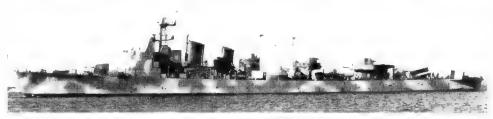
Reclassification Officially re-rated as frigates on 1 Jan. 1965

Fast Anti-Submarine Frigates—contd.



HALSINGBORG

1963, Royal Swedish Navy, Official



KALMAR

1962, Royal Swedish Navy, Official

Photographs A photograph of Visby appears in the 1951-52 and

1952-53 editions and of Sundsvaal in the 1953-54 to 1964-65 editions.

4 "Mjolner" Class

Name No. Builders		Builders	Launched			Converte	
MODE MJÖLNER	73 76	Götaverken Götaverken Eriksberg Öresundsvarvet	11	Apr.	1942 1942 1942 1943	1955 1955 1956 1955	

760 tons standard (960 tons full)
243\(\frac{1}{2}\) (w.l.), 256 (o.a.)×26\(\frac{1}{4}\)×
7\(\frac{1}{2}\) feet
2-4-1 inch; 2-40 mm. AA.
2 D.C.T.
2 De Laval geared turbines. 2 shafts. S.H.P.: 16,000=30 kts.
2, of 3-drum type
190 tons
1,260 miles at 20 kts.
100 Displacement: Dimensions:

Guns: A/S weapons: Machinery:

Boilers: Oil fuel: Radius: Complement:

Complement: 100
General
All laid down in Sep. 1941 and completed in 1942.
Formerly rated as seagoing torpedo boats or coastal destroyers (kustjagare). Originally fitted for minelaying, but converted into fast anti-submarine frigates and the 3—21 inch torpedo tubes removed.



MAGNE

1966, Royal Swedish Navy, Official

Photographs A photograph of Munin appears in the 1956-57 to 1959-60 editions, of Mjölner in the 1960-61 edition, and of Mode in the 1961-62 to 1965-66 editions Disposals
Two coastal destroyers Remus (ex-Astore) and
Romulus (ex-Spica). former Italian oceangoing torpedo
boats, were towed away for scrap in Aug. 1959.

MINELAYER (Minfartyg) Cadets' Seagoing Training Ship

ALVSNABBEN

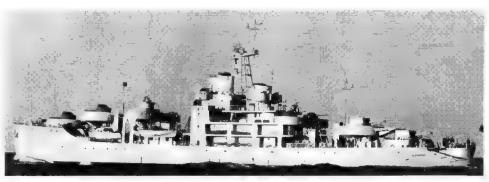
4,250 tons standard 317½ (w.l.), 334¾ (o.a.)×44½ ×16 feet 2—6 inch, 2—57 mm. AA. Bofors, 2—40 mm. AA. Bofors Diesels. 1 shaft. Speed 14 kts. 255 Displacement: Guns: Machinery: Complement:

General

Built on a merchantile hull by Eriksberg Mekaniska
Verkstad, Göteborg, Laid down in Oct. 1942, launched
on 19 Jan, 1943, and completed in Apr. 1943. Can
be used as Submarine Parent Ship or Minesweeper
Depot Ship. Employed as a training ship during 195358, and relieve the anti-aircraft crused Gotland as
Cadet's Seagoing Training Ship in 1959.

Rearmament

Re-armed in 1961. Formerly carried 4—6 inch, 8—40 mm. AA., 6—20 mm. AA.



ALVSNABBEN

1966, Royal Swedish Navy, Official

SUBMARINE DEPOT SHIP (Ubåts depåfartyg)

PATRICIA (ex-Patris II)

4,950 tons standard 335×47½×20 feet 8—40 mm. AA., 2—20 mm. Displacement: Dimensions: Guns:

8—40 mm. AA., 2—20 mm. AA. Triple expansion. 2 shafts. I.H.P. 2,900=15 kts. 2 oil free 500 (accommodation for) Machinery: Boilers:

Complement:

Former Swedish-Lloyd merchant liner. Built by Swan, Former Swedish-Lloyd merchant liner. Built by Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne Launched and completed in 1926. Acquired in 1940. She was reconstructed to increase the accommodation for about 500 men and to maintain and administer nine submarines.

Disposal The radar training ship Prins Carl (ex-Munin) was discarded in 1960.



PATRICIA

1966, Royal Swedish Navy, Official

GUNBOATS (Motorkanonbåtar)

8 + 12 New Construction

K 153 K 154 K 151 K 152 K 157 K 158 Displacement:

Guns: Guided weapons: Machinery:

120 tons standard (170 tons full load)
1-3 inch (75 mm.), 1-40 mm.
Light rocket launchers
Speed=25 kts.

General Heavily armed patrol craft of the gunboat type (kanonbåt) scheduled under the new programme, for use in narrow waters. Robust and seaworthy. Radar directed fire control, minelaying facilities, and propensity for anti-submarine operations. Eight under construction and twelve projected.



NEW MGB

1965, Royal Swedish Navy, Official

TORPEDO BOATS (Motortorpedbatar)

6 + 6 New Construction, Heavy Type

VEGA VIRGO CAPELLA CASTOR T 127 T 128 SIRIUS 131 132 VIRGO T 128 T 130 T 132

190 tons standard (200 tons normal)
139\{ (hull), 141 (o.a.)\times 23\{ feet}
1—57 mm. Bofors AA.
6—21 inch (single, fixed)
Light rocket launchers
3 Bristol Siddeley Proteus 1274 gas turbines.
3 shafts, S.H.P.: 12,300=40 kts.
28 (4 officers, 3 warrant officers, 7 petty officers, 14 ratings) Displacement. Dimensions: Guns: Tubes: Machinery:

ratings) General

The lead vessel of a class of six, constituting the first group, Spica was completed in 1966 by Götaverken, Göteborg, who shared the contract for the series with Karlskronavarvet. The largest craft of their type, Designed to operate in areas contaminated by nuclear full-out. Sirius and Capella built by Götaverken Castor, Vega and Virgo by Karlskronavarvet. Six more projected.

Gunnery

The 57 mm gun is in a remote power operated turret controlled by a radar equipped director, and with a 57 mm rocket flare projector placed before, and a 10.3 mm launcher on each side, of the totally enclosed bridge. The turret is mounted at the centre of a long foredeck to provide wide and clear areas



SPICA

1966, Royal Swedish Navy, Official

12 M.T.B.—M.G.B. Convertibles

ALDEBARAN (T 107) ALTAIR (T 108) ANTARES (T 109) ARCTURUS (T 110)

POLARIS (T 103) POLLUX (T 104) REGULUS (T 105) RIGEL (T 106) ARGO (T 111) ASTREA (T 112) PERSEUS (T 101) PLEJAD (T 102) 105) 155 tons (Perseus 145 tons) standard (170 tons full

Displacement: Dimensions:

Guns: Tubes: Machinery:

Range: Complement:

General
Perseus, built at Karlskrona, was launched in 1950, and completed in 1951, the first of a new convertible type of motor torpedo boat and motor gunboat of experimental design, re-engined with Götaverken machinery to give much greater power. She differs slightly in appearance from the other boats of this group, but her funnel has been removed. The remaining eleven, built at Lurssen, Vegesack, were launched between 1954 and 1959 and all completed by 1960.

her funnel has been removed. In April 2015 and all completed by 1960. Photographs
Photographs of Perseus appear in the 1951-52 to 1953-54 editions, of Plejad In the 1954-55 to 1964-65 editions, of Plejad emerging from camouflaged nuclear bomb-proof shelter in the 1962-63 to 1964-65 editions, and of Antares in the 1960-61 to 1964-65 editions.



POLARIS

1965, Royal Swedish Navy, Official

Torpedo Boats-contd.

15 "T 42" Type

T 42 T 43 T 44 T 51 T 52 T 53

40 tons standard 75½×17×5 feet 1—40 mm. Bofors AA. 2—21 inch Displacement: Dimensions: Guns: Tubes: Machinery: Diesels. Speed=40 kts.

Built by Kockums Mekaniska Verkstads Aktiebolag, Malmö. All launched between 1956 and 1959 and completed by 1960.

Photographs A photograph of T 42 appears in the 1957-58 to 1963-64 editions



1964, Royal Swedish Navy, Official

T 41

Displacement: Dimensions: Guns: Tubes: Machinery: 40 tons standard $75\frac{1}{2}\times18\frac{1}{2}\times6$ feet 1—40 mm. Bofors AA. 2—21 inch Diesels Speed=40 kts.

General Provided under the 1952 Programme. Built by Kockums Mekaniska Verkstads Aktiebolag, Malmö. Launched and completed in 1952.



T 41

Royal Swedish Navy, Official

T 40

9 Medium Type

40 tons standard
76×17×4½ feet
1—40 mm. Bofors AA., 2 M.G.
2—21 inch
Diesels. Speed=45 kts. Displacement: Dimensions: Guns: Tubes: Machinery:

Launched in 1950-52. Of improved T 31 design. Built by Kockums Mekaniska Verkstads Aktiebolag, Malmö. Of all welded steel construction.

Photographs

A photograph of T 38 appears in the 1953-54 to 1962-63 editions.

Disposals

Of the small type of motor torpedo boats, T 21, T 22, T 23, T 24, T 25, T 26 and T 27 were scrapped in 1959, and T 28, T 29, T 30 and T 31 were scrapped in 1960. The older motor torpedo boats, T 15, T 16, T 17 and T 18 were discarded in 1957.



T 40

1963, Royal Swedish Navy, Official

COASTAL MINESWEEPERS

12 "Arko" Class

HASSLÖ (M 64) IGGÖ (M 60) KARLSÖ (M 59) STYRSÖ (M 61) VALLÖ (M 66) VINÖ (M 65) ARKÖ (M 57) ASPÖ (M 63) BLIDÖ (M 68) NÄMDÖ (M 67) SKAFTÖ (M 62) SPÄRÖ (M 58)

Displacement: Displacement Dimensions: Guns: Machinery:

300 tons standard 131 (pp.), 144½ (o.a.)×23×8 feet 1—40 mm. AA.

Mercedes-Benz diesels. 2 shafts. B.H.P.: 2,000=14-5 kts.

Construction

Construction
Of woodern construction. Basically similar to the "Hanö class below. There is a small difference in the deck-line between M 57-59 and M 60-68. Arkö was launched on 21 Jan. 1957. Arkö, Karlsö and Spörö were completed in 1957, Iggö in 1960. Skoftö in 1961. Aspö, Haðsiö, Vinö and Styrsö in 1962 Vållo in 1963, and Blido and Nämdö in 1964. Six more are in the new construction programme.

A photograph of Arkö appears in the 1959-60 to 1965-66 editions.



ASPÖ

1966, Royal Swedish Navy, Official

6 "Hano" Class

HANÖ (M 51) ORNÖ (M 55)

STURKÖ (M 54) TARNO (M 52)

TJURKÖ (M 53) UTÖ (M 56)

Displacement: Dimensions: Guns: Machinery:

270 tons standard 1311×23×8 feet 2—40 mm. AA. Diesels. 2 shafts. B.H.P.: 2,400=14·5 kts.

Construction
All the minesweepers of this class were built at Karlskrona and launched in 1953



ORNÖ

1963, Royal Swedish Navy, Official

MUL 18 (1956) MUL 19 (1956)

MINING TENDERS (Minutlaggare)

MUL 12 (1952) M MUL 13 (1952) M Displacement: Dimensions: Guns: Machinery:

MUL 14 (1953) MUL 16 (1956) MUL 15 (1953) MUL 17 (1956) MUL 17 (1956) MUL 102½×25×10½ feet 1—40 mm. 1 Diesel-electric. B.H.P.: 360=10·5 kts.

General
Launch dates above. Completed in 1957. All of similar appearance to MUL 15, see above. A photograph of MUL 12 appears in the 1956-57 to 1962-63 editions.

MUL 11 (1946)

200 tons standard (officially revised figure)

Displacement: Dimensions:

200 tons standard (officially revised figure) $98\frac{3\times23\frac{2}{3}\times11}{2}$ feet 2—20 mm 2 diesels. Speed: 10 kts.

Guns:
Guns:
Machinery:
MUL 10 (1939)
Displacement:
Dimensions:

166 tons standard (officially revised figure) 90×18 $\frac{1}{3}$ ×7 $\frac{1}{2}$ feet 4 M.G. Diesel. Speed 9·5 kts.

Guns: Machinery:

General Launch dates above. Manned by Coastal Artillery personnel. MUL 7 was discarded in 1954, MUL 8 in 1955, MUL 3 and MUL 9 in 1956.



MUL 15

1963. Royal Swedish Navy, Official

MINESWEEPERS

6 "Bredskar" Class

2 Eriksberg

2 Lindholmen

BREDSKAR 59 (12 Dec. 40) BREMON 55 (18 June 40)

öRSKÄR 62 (31 Mar. 41) RAMSKÄR 61 (28 Oct. 40)

ULVÖN 58 (29 Apr. 41)

1 Öresundsvaret KULLEN 64 (29 Oct. 40)

Displacement: Dimensions: Guns: Machinery:

450 tons standard (530 tons full load)
180 (pp.), 187 (o.a.)×25×8 feet
1.4-1 inch, 1.40 mm, AA., 1 M.G:
De Laval geared turbines, S.H.P.: 3,200=17 kts.
2 Vanson

2 Vanso 70 tons 37 Oil fuel: Complement:

General General
All completed in 1940-41. Builders and launch dates above. Pennant numbers are shown after names. Fitted for minelaying. The after deckhouse was removed in 1962.

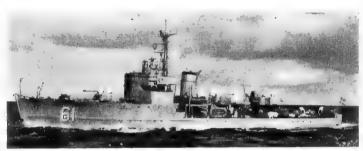
Photographs
A photograph of Bremön appears in the 1957-58 to 1962-63 editions.

Disposals

Of the "Bredskär class, Ven was scrapped in 1960, Grönskär was officially removed from the effective list on 1 Apr. 1963, and Halmön Koster, Sandön and Vingo were officially discarded on 1 Jan. 1964.

Of the "Arholma" class, Arholma was scrapped in 1959 and Landsort was officially discarded on 1 Jan. 1964.

Of the four old minesweepers of the ''Jägaren'' class, Snapphanen was transferred to the new Guatemalan Navy in 1959, and Jägaren, Kaparen and Vaktaren were scrapped in 1958.



RAMSKÄR

1963, Royal Swedish Navy, Official

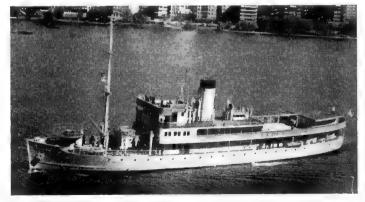
STAFF SHIP (Srabsfartyg)

MARIEHOLM

Displacement; Dimension: Guns

1,445 toms standard 210 \times 32 $\frac{1}{2}\times$ 14 feet 2 M.G. Speed: 12 kts.

General Former passenger ship. Completed in 1934. Converted during the Second World War to serve as a Base Communication Centre for the Commander-in-Chief of the Active Fleet. Recently used as a Staff Ship for the Commander-in-Chief in winter time, flying his flag. The ship had her mainmast removed and a helicoter platform installed aft in 1959 for employment as flagship of the Active Fleet (the "Coast Fleet"). The 40 mm. Bofors on the forecastle has been landed for the time being.



MARIEHOLM

1959, Photo A. Kull

TRAINING SHIPS (Skonerter)

FALKEN (12 June 1947)

GLADAN (14 Nov. 1946)

Displacement: Dimensions: Machinery:

220 tons standard 93 (w.l.), 129½ (o.a.) \times 23½ \times 13½ feet Auxiliary diesel. B.H.P.: 50

General Sail training ships. Schooners, Launch dates above. Sail area 5,511 square feet.

Disposals

Of the two coast artillery patrol vessels of the "Granat" class, converted Norwegian trawlers, Granat was discarded in 1964, and Harpun was scrapped in 1966. The coast artillery patrol vessels Krut and Konan, converted Norwegian trawlers, were sold out of the service in 1959.

INSHORE MINESWEEPERS

9 " Orust " Class

BLACKAN (M 44) DÄMMAN (M 45) GALTEN (M 46)

GILLÖGA (M 47) HISINGEN (M 43) ORUST (M 41)

RÖDLÖGA (M 48) SVARTLÖGA (M 49) TJÖRN (M 42)

Displacement: Dimensions: Guns: Machinery:

Orust, Tjörn: 110 tons standard, others 140 tons Orust, Tjörn: 62½×19½×4½ feet; others:76½×21×4½ Orust, Tjörn: 1—20 mm. AA., others 1—40 mm. AA. 2 diesels. B.H.P.: 600=9 kts.

General
Orust and Tjörn were launched in 1948. Of the fishing cutter type. Blackan. Dämman, Galten and Hisingen were launched in 1957. Three more authorised in Apr. 1962 were built in 1964.



GALTEN

1963, Royal Swedish Navy, Official

10 Large Motor Launch Type

M 25 M 26

Displacement: Dimensions:

70 tons standard $0.5\frac{1}{3}\times16\frac{1}{2}\times4\frac{1}{2}$ feet 1-20 mm. Diesel. B.H.P.: 6.00=13 kts.

All launched in 1941. Inshore minesweepers of the large motor launch type. M 17 and M 18 of this type were rerated as tenders and renamed Lommon and Spoven, respectively, see later page.

Disposals

Disposals

Of the inshore minesweepers of the medium motor launch type, M 1 and M 2 were scrapped in 1953, M 3, M 4, M 5, M 6, M 9 and M 10 were converted into inshore surveying vessels (see later page), M 7 and M 8 were taken over as patrol boats, and M 11, M 12, M 13 and M 14, were stricken in 1960.



M 25

Royal Swedish Navy, Official

SALVAGE VESSELS (Bargningsfartyg)

BELOS

Displacement: Dimensions:

950 tons standard (officially revised figure) $204{\times}27{\times}12$ feet

Aircraft: Machinery:

1 helicopter Diesel. 2 shafts, B.H.P.; 1,200=13 kts.

General A new salvage vessel built to succeed and take the name of the old Belos. Launched on 15 Nov. 1961. Completed on 29 May 1963. Equipped with a decompression

Chamber,
Disposal
The old salvage vessel Belos, the world's oldest naval vessel in service (she helped to raise the 334-year old warship Vasa in 1961) was discarded on 1 Aug. 1963.



BELOS

1964, Royal Swedish Navy, Official

PATROL BOATS (Vedettbåtar)

V 57

Displacement: Dimensions: Guns:

115 tons standard (officially revised figure) 98 (pp.), 105 (o.a.) \times 17½ \times 7½ feet 2—20 mm, AA. Diesel. B,H.P.: 500=13·5 kts.

Machinery: Complement: Built at Stockholm, Launched in 1953. Fitted for minelaying. In Coast Artillery,



V 57

1962, A. Kull

V 55 (19 Sep. 1944) V 56 (2 Aug. 1945)

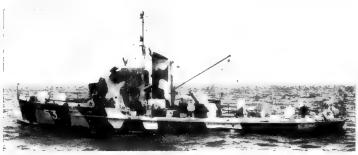
V 51 (1944) V 52 (4 Oct. 1945) Displacement:

V 53 (4 Dec. 1944) **V 54** (4 Oct. 1945)

125 tons standard
98×17½×7½ to 7½ feet
1—20 mm.. 1 M.G.
Triple expansion. 1 shaft. I.H.P.: 400=12 kts.
1 Watertube (coal-burning)

Dimensions: Guns: Machinery: Boiler: General

Launch dates above. All the above boats are manned by the Coast Artillery. The old ex-torpedo boats V 5, V 8 and V 14 were discarded in 1957.



V 53

1962, Royal Swedish Navy, Official

SVK 5

SVK 4

70

30 tons standard 69×15×4 feet 1—20 mm, Diesel. Speed=19 kts, Displacement: Dimensions:

Guns: Machinery:

SVK 1

Guard boats of the coast artillery (Bevakningsbåt) launched in 1960-61.

SVK 2 SVK 3 Displacement: Dimensions:

19 tons 55½×12×4 feet 1—20 mm. AA. 11 kts. Guns: Speed:

General
Patrol launches of the Sjövärnskårens type. All launched in 1944. Sjövärnskåren = R.N.V.R. Tumlaren, a small fishing cutter, also belongs to the SVK.

M 7

M 8 50 tons standard 78½×16½×4½ feet 1—20 mm. Diesel. B.H.P.: 400=13 kts. Displacement: Dimensions: Guns: Machinery:

General

Former inshore minesweepers of the medium motor launch type, taken over as patrol boats.

WATER CARRIERS

FRYKEN

Displacement: Dimensions:

307 tons standard 105×19×9 feet Speed=10 kts.

Machinery: General

A new construction water carrier, Launched in 1959 and completed in 1960. Pennant No. 263.

UNDEN

Displacement: Dimensions: Speed:

500 tons $121^{\downarrow}\times23^{\downarrow}\times14$ feet 10 kts.

General Launched in 1946. Pennant No. 268 painted on the bows.

GÄLNAN

Displacement: Dimensions:

100 tons 95×19×9 feet Speed=8 kts.

Machinery: General

Launched in 1942. Small water tanker for harbour and local services.

SUPPLY SHIP

FREJA

Displacement: Machinery:

300 tons standard (450 tons full load) $160 \ ^4\times 27 \ ^1\times 10$ feet Speed: 11 kts.

Built by Kroger, Rendsburg, Launched in 1953. Employed as a provision ship. No. 270. General

I New Construction

Displacement: Dimensions:

900 tons Length $183\frac{3}{4}$ feet Speed = 15kts. Machinery:

General

A new surveying vessel is planned to replace Svalan in the near future, but it is still uncertain when she will be built.

RAN

Displacement: Dimensions:

285 tons standard $98\frac{1}{2}\times23\times8\frac{1}{2}$ feet

General

Ran was launched in 1945 and completed and commissioned for service in 1946.

GUSTAF AF KLINT

Displacement: Dimensions: Machinery:

750 tons standard 170 $\frac{1}{2}$ ×28 $\frac{1}{2}$ ×15 $\frac{1}{2}$ feet Diesel. Speed=10 kts.

Launched in 1941. Reconstructed in 1963, see revised particulars above. She formerly had a displacement of 650 tons standard and a length of 154 feet. A photograph appears in the 1953-54 to 1963-64 editions.



GUSTAF AV KLINT

1966, Royal Swedish Navy, Official

6 Medium Motor Launch Type

ANDEN (ex-M 9) MÄSEN (ex-M 3) SVÄRTAN (ex-M 5) TÄRNAN (ex-M 4) GRISSLAN (ex-M 6)

Displacement: Dimensions: Machinery:

50 tons standard $78\frac{1}{4}\times16\frac{1}{2}\times4\frac{1}{2}$ feet Diesel, B.H.P.: 400=13 kts.

General

General
Former inshore minesweepers of the motor launch type, launched in 1940 and subsequently converted into surveying vessels. M 7 and M. 8 were taken over as patrol
boats (see under Inshore Minesweepers and under Patrol Boats on earlier pages).

IOHAN NORDENANKAR (1924)

Displacement:
Dimensions:
Machinery:
Disposal

260 tons standard $98\frac{1}{2}\times22\frac{1}{2}\times8\frac{1}{2}$ feet Speed: 8 kts.

Disposal The small surveying vessel Kompass, launched in 1938, was removed from the effective list in 1963.

PETTER GEDDA (1924)

Displacement: Dimensions: Machinery: 135 tons standard $82 \times 18 \times 7$ feet Speed: 6 kts.

EJDERN (1916)
Displacement:
Dimensions: 95 tons standard $78\frac{1}{4} \times 15\frac{1}{4} \times 17\frac{1}{2}$ feet Speed: 8 kts. Machinery:

NILS STRÖMCRONA (1894)

Displacement:
Dimensions:
Guns:
Machinery:

General

140 tons standard 90×17×8½ feet None in peacetime Speed: 9 kts. eneral Launch dates of the above four vessels in parentheses above. The older surveying essels will eventually be replaced.

vessels

Disposals The ve The very Disposals

The very old surveying vessel Svalan, launched in 1881, see particulars in the 1960-61 and earlier editions, is being scrapped and replaced by a new surveying vessel in the near future.

The very old surveying vessel Svensksund, launched in 1891, was officially deleted from the list in 1962.

ICEBREAKERS (Isbrytarfartyg)

TOR

Displacement: Dimensions.

Machinery:

4,980 tons standard (official revised figure) 254 $\frac{1}{2}$ (pp.), 277 $\frac{1}{4}$ (o.d.)×69 $\frac{1}{2}$ ×20 $\frac{1}{2}$ feet Wartsilä-Sulzer diesel-electric. 4 shafts. 2 forward, 2 aft. H.P.: 12,000–18 kts.

Launched from Wärtsilä's Crichton-Vulcan yard, Turku, on 25 May 1963. Towed to Sandvikens Skeppsdocka, Helsingfors, for completion. Delivered on 31 Jan. 1964. Dimensionally larger but generally similar to Oden, and a near-sister to Tarmo built for Finland.



1964, Royal Swedish Navy, Official

Icebreakers-contd.

ODEN Displacement: Dimensions: Machinery:

4,950 tons standard (officially revised figure) 256 (pp.), $273\frac{1}{2}$ (o.a.) $\times63\frac{3}{7}\times22\frac{2}{3}$ feet Diese-lectric: 4 shafts. B.H.P.: 10,500-17 kts. tons

Oil fuel: Complement: Construction

Similar to the Finnish Voimo and 3 Soviet icebreakers. 4 screws, 2 forward, 2 aft. Built at Sandviken, Helsingfors, Launched on 16 Oct. 1956. Completed in 1958.



ODEN

Royal Swedish Navy, Official

THULE

Displacement: Dimensions Machinery:

2,200 tons standard 187 (w.l.), $204\frac{1}{4}$ (o.a.) $\times50\times19$ (max.) feet Diesel-electric. 3 shafts (1 for'd), B.H.P.: 4,800=

Complement:

Construction

Launched at the Naval Dockyard, Karlskrona, in 1951. Completed in 1953.



THULE

1966, Royal Swedish Navy, Official

YMER

Displacement: Dimensions: Guns: Machinery: Complement:

4.330 tons standard 240 (w.l.), 258 (o.a.) \times 63 $\frac{1}{8}\times$ 22 $\frac{1}{9}$ feet 4—3 inch AA., 1—40 mm. AA., 4—25 mm. AA. 6 Atlas diesel-electric. H.P.: 9,000=16 kts.

Construction

Launched by Kokums M.V. A/B., Malmö in 1932. First large icebreaker with diesel- electric propulsion, Designed to carry a seaplane for ice spotting and survey.



YMER

ATLE

Royal Swedish Navy, Official

Displacement: Dimensions: Guns: Machinery: Complement:

2,740 tons standard (officially revised figure) 194 (w.l.), 207 (o.a.) \times 55 $\frac{1}{2}\times22\frac{1}{2}$ feet 4—57 mm AA., 4 M.G. H.P.: 4,000=15 kts.

General Launched in 1925. This icebreaker will eventually be replaced by a new icebreaker.



AJAX

SPOVEN (ex-M 18)

LANDING CRAFT

GRIM

Displacement: Dimensions:

Machinery:

380 tons $116\frac{1}{2}\times28\times8\frac{1}{2}$ feet Speed=12 kts.

General General utility landing craft of improved "Ane" class design. Launched in 1961.



GRIM

1966, Royal Swedish Navy, Official

2 "Skagul" Class

SKAGUL Displacement: Dimensions: Machinery: SLEIPNER

355 tons standard $118\times28\times8\frac{1}{2}$ feet Speed=12 kts.

Construction Sleibner

was launched in 1959 and completed in 1960. Skagul was launched and completed in 1960.



SKAGUL

1962, Royal Swedish Navy, Official

Nos. 201-204, 205-238, 239-241

Displacement:
Dimensions:
Machinery:

31 tons $69\times13\frac{1}{4}\times4\frac{1}{4}$ feet Speed=18 kts.

General A series of 41 landing craft rated as Landstigningfarkoster, Launched in 1957.

1.51 L 52

Displacement: Dimensions:

Machinery:

32 tons standard (officially revised figure) $50\frac{1}{2}\times16\times3\frac{1}{2}$ feet Diesel. B.H.P.; 140=8 kts.

General

Landing craft of general utility type, Launched in 1948, L 53 and L 54 laid up 1960.

ANE

BALDER

RING

L 55

Displacement: Dimensions:

Machinery:

135 tons (Loke 145 tons) $91\frac{5}{5}\times26\frac{1}{4}\times5$ feet (Loke 6 feet) Speed=8.5 kts. (Loke 9.2 kts.)

General

Artillery transport craft for general purpose duties. Launched in 1943-45.

OILERS (Tankfartyg)

TANKAREN (ex-Lister)

Displacement: Measurement: Dimensions: Machinery: 500 tons standard 300 tons deadweight 118 < 22×10 feet Speed: 10 kts.

Fleet freighting oil tanker. Launched in 1941, Pennant No. 269.

OLJAREN (ex-Martha)

Displacement: Cargo capacity:

1,100 tons standard 695 tons 179×28×11 feet

Dimensions: Machinery:

2-25 mm. A/ Speed: 9 kts.

Photographs

A photograph of Oljaren appears in the 1959-60 to 1965-66 editions.

ELDAREN (ex-Muron)

Displacement: Cargo capacity: Dimensions:

2-25 mm. AA Speed: 9.5 kts. Guns: Machinery:

General

Launched in 1939 (Oljaren) and 1938 (Eldaren). Pennant Nos. 267 and 266, respectively.

Disposal
The old oiler Brännaren was discarded on 1 Jan. 1964, it is officially stated.

TENDERS

PELIKANEN

Displacement:

100 tons standard (official figure)

108 ½×19×6 feet Speed=15 kts. Dimensions: Machinery:

General

Torpedo recovery and rocket trials vessel. Launched in 1964.

450 tons $108\frac{1}{4}\times28\frac{5}{6}\times12$ feet Displacement: Dimensions: Achilles was launched in 1962 and Ajax in 1963. Both are icebreaking tugs of the same class. Pennant Nos. 276 and 277, respectively.

HERMES

 $\begin{array}{c} 185 \quad tons \\ 75\frac{1}{2}\times22\frac{1}{2}\times13 \quad feet \\ \text{Speed} = 11.5 \quad kts. \end{array}$

Displacement: Dimensions: Machinery:

Launched in 1957. Pennant No. 318.

HÄGERN (ex-Torpedbärgaren)

Displacement: Dimensions:

50 tons standard 92×16+×6 feet

General

Hägern was launched im 1951, Pennant No. 274. Pelikanen is similar.

LOMMEN (ex-M 17)

70 tons standard $85\frac{1}{2}\times16\frac{1}{2}\times4\frac{1}{2}$ feet Diesel, B.H.P.: 600=13 kts. Displacement: Dimensions:

Machinery: Former inshore minesweepers of the large motor launch type. Both launched in 1941.

The tenders Starkodder (ex-Graham) and Styrbjörn (ex-Klo), former whale catchers, built in Norway, were still in existence in 1961. The tender Orion was stricken in 1960.

The old supply tender Sveparen, former minesweeper, ex-tug, was officially discarded on 1 Jan. 1964. Sister ship Sprängaren was discarded in 1961.

SYRIA

MINESWEEPERS

2 Ex-U.S.S.R. "T 43" Type

Displacement: Dimensions:

Guns: Machinery: 500 tons standard (600 tons full load) $200\times27\frac{1}{2}\times9$ feet 4-37 mm. AA., 8-13 mm. AA. Diesel motors. 2 shafts. Speed=18 kts.

General Navy.

Reported in 1962 to have been transferred from the Soviet Navy to the Syrian

PATROL VESSELS

3 Ex-French "Ch" Type

AKABA BEN NASEH (ex-Ch 10)
AL HARISSI (ex-Ch 19)
Displacement: 107 to
Dimensions: 116½

Guns: A/S weapons: Machinery: Oil fuel:

107 tons standard (131 tons full load)
116½ (pp.), 121½ (o.a.)×17½×6½ feet
1—3 inch; 2—20 mm. AA.
Depth charges
MAN diesels. 2 shafts. B.H.P.: 1,130=16 kts.

Radius: Complement:

5 tons 1,200 miles at 8 kts.; 680 miles at 13 kts.

General

These former French submarine chasers were transferred in 1962 to form the nucleus of the Syrian Navy.

Name Builders Laid down Launched Completed

Akaba Ben Naseh Ben Said

A. C. de France A.C. Seine Maut A.C. Seine Maut

Apr. 1940 1940 1940 Jan. 1940 1938 1938 1939 1939

TAREK BEN SAID (ex-Ch 13)



FAST PATROL BOATS

15 Ex-U.S.S.R. Type

Displacement:

50 tons 2—21 inch Speed=40 kts.

General Five motor torpedo boats were transferred from the U.S.S.R. at Latakia on 7 Feb. 1957, and others subsequently.

New Construction

New Construction

The construction is planned of patrol vessels of 150 tons with a speed of 27 kts.; motor torpedo boats; and seaward defence boats of 60 tons with a speed of 23 kts.
Acquisition Programme
Two small submarines of the "M" type and six motor torpedo boats were expected from the U.S.S.R. Several small craft were received from France.

TAIWAN CHINA

Administration

Commander-in-Chief Chinese Nationalist Navy: Vice-Admiral Feng Chi-Chung.

Fleet Commander:

Vice-Admiral Li Tan-Chien.

Naval Attaché in Washington: Rear Admiral Chow Chian.

Ships

Chinese (Taiwan) ship's names are prefaced by "R.C.N." (Republic of China Navy).

Summary

Coastal Craft Destroyers 50 Frigates Escort Vessels Transports 5 Oilers Fleet Minesweepers LSTs LSMs 27 18 Minelaver

LSIs

Submarine Chasers

5

16

Gunboat Coastal Minesweepers ISLs 39 LCUs

Personnel

1966: Naval, 35,000 officers and ratings; Marine, 27,000 officers and men.

The Navy has undergone training with the United States Military Assistance Advisory Group on Taiwan.

United States Marine Corps advisers have trained Taiwan marines in amphibious operations.

Mercantile Marine

Lloyd's Register of Shipping: 128 vessels of 633,274 tons gross

SUBMARINES

General

Early in 1960 Nationalist China asked the United States to equip the Nationalists with submarines, and on 14 Mar. 1960, Nationalist China confirmed reports that it will receive submarines from the U.S. Navy under the Mutual Defense Assistance Program, In

June 1963 the Commander-in-Chief, Chinese Nationalist Navy, predicted that his forces will acquire missile-firing submarines.

DESTROVERS

HSUEN YANG (ex-U.S.S. Rodman, DD 456, ex-DMS 21) NAN YANG (ex-U.S.S. Plunkett, DD 431)

2 Ex-U.S. "Gleaves" Class

Displacement:

Dimensions:

Hsuen Yang 1,630 tons, Nan Yang 1,700 tons standard (2,575 tons full load)
341 (w.l.) 348½ (o.a.)×36×
18 feet
Nan Yang: 4—5 inch, 38 cal.;
4—40 mm. AA.; 4—20 mm. AA.
Hsuen Yang: 3—5 inch, 38 cal.;
4—40 mm. AA.; 4—20 mm. AA.
5—21 inch (in Nan Yang)
G.E. geared turbines. 2 shafts.
S.H.P.: 50,000=34 kts.
4 Babcock & Wilcox
600 tons

Tubes: Machinery:

Oil fuel: 600 tons

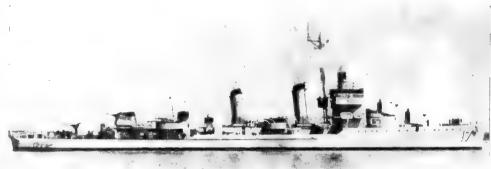
Radius 5,000 miles at 15 kts.

Complement:

General General
Transferred on loan from the U.S. Navy to the
Chinese (Taiwan) Navy at Charleston, South Carolina,
Rodman on 28 July 1955 and Plunkett on 16 Feb. 1959
(sailed for Taiwan in May 1959). The loan of Hsuen
Yang (ex-Rodman) was extended for five more years
by the U.S.A. in 1960.

The loan of another destroyer to Taiwan was authorised by the U.S.A. in May 1966.

Builders Completed Launched Laid down Federal S.B. & D.D. Co. Federal S.B. & D.D. Co. 26 Sep. 1941 9 Mar. 1940 27 Jan. 1942 16 July 1940 2 Dec. 1940 1 Mar. 1939



NAN YANG

1962, courtesy Mr. W. H. Davis

Photographs
An official photograph of the destroyer Hsuen Yang, former U.S. destroyer minesweeper, afterwards reclassified as a destroyer, a port quarter oblique view,

appears in the 1956-57 ot 1961-62 editions, showing a different scheme of main armament with a modified a differ layout.

HAN YANG (ex-U.S.S.Hilary P. Jones, DD 427) LO YANG (ex-U.S.S. Benson, DD 421)

2 Ex-U.S. "Mayo" Class

Displacement:

1,620 tons standard (2,450 tons

Dimensions:

full load) 340 (w.l.), $348\frac{1}{2}$ (o.a.)×35 $\frac{1}{3}$ × 18 feet

Guns:

4-5 inch 38 cal.; 4-40 mm. 4—5 inch 38 cal.; 4—40 mm. AA., 6—20 mm. AA., D.C. mortar and D.C. throwers 2 sets G.E. geared turbines. 2 shafts. S.H.P.: 50,000=34 kts. 4 high pressure

A/S weapons: Machinery:

600 tons

Boilers: Oil fuel:

5,000 miles at 15 kts. Radius:

Complement:

General Presented by U.S.A. Transferred to China (Taiwan) at Charleston, South Carolina, on 26 Feb. 1954.

A photograph of Lo Yang appears in the 1954-55 to 1957-58 editions.

I Ex-Jananese "Kagero" Type

Displacement: Dimensions:

2,050 tons standard (2,490 tons

2,050 tons standard (2,490 tons full load) 388 (o.a.) \times 35½ \times 12½ feet 3—5 inch, 38 cal. d.p. in open mounts, in "A", "X" and "Y" positions; 2—3 inch d.p. in open mounts, one on deck in "P" position, one in a deckhouse in "Q" position, 10—40 mm. AA. distributed fore and aft D.C. racks 2 geared turbines 2 shafts. S.H.P.: 52,000=27 kts. See General 3 Kampon 5,000 miles at 18 kts. 290 Guns:

A/S weapons: Machinery:

Boilers:

Radius: Complement:

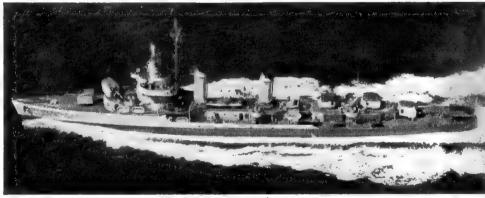
290

General General
The largest combatant unit in the Taiwan Navy.
Underwent extensive overhaul in 1951-52. On trials in
Feb. 1953, 27.5 kts was reached, and 26 kts. maintained for 1 hour, Rearmed with U.S. guns in 1959.

Builders Philadelphia Navy Yard Bethlehem (Quincy) Laid down 16 Nov. 1938 16 May 1938

Launched 14 Dec. 1939 15 Nov. 1939

Completed 7 Sep. 1940 25 July 1940



HAN YANG

TAN YANG (ex-Yukikaze)

Builders Sasebo, Japan Launched

Completed 1940

Added 1957, Official



TA YANG

Disposal The destroyer leader Fen Yang (ex-Japanese Yuki-kaze), unarmed and in a very bad state, able neither 1962, Official

to steam nor steer, and laid up as non-operational for some years, has been discarded.

FRIGATES

	Pen No.	Launched	Completed
TAI CHAO (ex-U.S.S. Carter, DE 112)	26	29 Feb. 1944	2 May 194
TAI HO (ex-U.S.S. Thomas, DE 102)	23	31 July 1943	21 Nov. 194
TAI HU (ex-U.S.S. Breeman, DE 104)	25	31 July 1943	12 Dec. 194
TAI TSANG (ex-Bostwick, DE 103)	24	30 Aug. 1943	21 Dec. 194

4 Ex-U.S. "Bostwick" Type

Displacement: 1,240 tons standard (1,900 tons

1,240 tons standard (1,900 tons full load) 306 (o.a.) \times 36 $\frac{1}{4}$ \times 12 feet 4—3 inch, 50 cal. d.p., 3 or 4—40 mm. AA., 9 or 10—20 mm: Dimensions: Guns:

AA. 8 D.C.T. A/S weapons: Tubes

3—21 inch in triple mounting Diesel electric, 2 shafts. B.H.P.: 6,000=19 kts. 300 tons Machinery:

Oil fuel:

Radius 11,500 miles at 11 kts.

Complement:

General

Former United States destroyer escorts, Transferred on 31 Dec. 1948. Two underwent overhaul in Japanese yards, late in 1952.

Future Transfer
The President of the United States has signed a bill authorising the loan of a destroyer escort (and a destroyer, see previous page) to Nationalist China (officially announced on 4 May 1966)
The ship, laid up in the "mothball" fleet, will be brought forward from reserve and refitted and modernised before transfer to Taiwan China.



TAI HO Type

Added 1964, Official

I Ex-U.S. "Evarts" Type

1,150 tons standard (1,430 tons Displacement;

Dimensions:

Guns:

1,150 tons standard (1,430 tons full load)
283½ (w.l.), 289½ (o.a.)×35×
10¾ feet
3—3 inch, 50 cal, 4—40 mm.
AA., 11—20 mm. AA.
9 D.C.T.
Diesel electric drive, 2 shafts.
H.P.: 6,000=19 kts.
5,500 miles at 14 kts.
120 A/S weapons: Machinery:

Radius: Complement: 120

General

Former United States destroyer escort. Presented to China in 1946. Sister ship Tai Ping (ex-U.S.S. Decker, DE 47), was torpedoed and sunk by Chinese Republican motor torpedo boats off Tachen Islands on 14 Nov. 1954.

Recent Disposals

Displacement:

Dimensions:

Recent Disposals

The following frigates were scrapped in 1964:—
Hsin Yang (ex-Hatsume), ex-Japanese "Hagi Type,
modified "Matsu" class (sister ships Hon Yang, Hua
Yang and Hui Yang were already hulked or discarded
as beyond economical repair); Yung Ching (ex-Salshu),
ex-Japanese Minelaying Type, formerly rated as a light
minelayer and latterly as a destroyer escort.
The following frigates were discarded in 1963:—
Cheng An (ex-Hsueh Feng, ex-Wei Tal, ex-Yashiro),
ex-Japanese "Mikura" Type; Lin An (ex-Tsushima), exJapanese "Etorofu" type; Chen An (ex-Japanese No.

TAI KANG (ex-U.S. Wyffels, DE 6)

Builders Boston Navy Yard

Launched 1943

Completed 21 Apr. 1943



TAI KANG

40) and Tai An (ex-Japanese No. 104), former Japanese turbine "Kaiboken" Type (sister ships Tsi Nan and Tung An were already discarded); Chao An (ex-Japanese No.

107) and Jul An (ex-Ying Kan, ex-Japanese No. 67), former Japanese diesel "Kaibokan" Type (sister ships Chang An and Tsing Pai were already hulked).

TE-AN (ex-Hsi Lin ex-Orangeville, ex-Hedingham Castle)

Ex-Canadian "Castle" Type

full load)

No. 81 (ex-61)

Builders 1943 Henry Robb Ltd., Leith 23 July

Launched 26 Jan. 1944

Completed Transfer Transferred 1951

Official

1,100 tons standard (1,580 tons

252 (o.a.)×36}×15} feet

Guns

1—4.7 inch d.p., 1—3 inch, 4—40 mm., 4—20 mm. Triple expansion I.H.P.; 2,800=16.5 kts.

Machinery: 2 three-drum type 480 tons 9,400 miles at 10 kts. 100 Boilers: Oil fuel: Radius:

Complement:

Genaral

Genard

Originally a Canadian "Castle" class corvette, but subsequently adapted for commercial use. Reconverted from a merchant ship and taken over by Chinese (Taiwan) Navy in June 1951 and rearmed.

Disbosal

Sister ship Kao-An (ex-Chin Chin, ex-Tilfsonburg, ex-Pembroke Castle) was discarded in 1963.

FAST TRANSPORTS (Modified Destroyer Escorts)

Ex-U.S.S. BULL, APD 78, ex-DE 693
Ex-U.S.S. DONALD W. WOLF, APD 129, ex-DE 713
Ex-U.S.S. GANTHER, APD 42, ex-DE 60
Ex-U.S.S. KINZER, APD 91, ex-DE 232
Ex-U.S.S. KLINE, APD 120, ex-DE 687
Ex-U.S.S. TRUXTON, APD 78, ex-DE 282
TIEN SHAN (ex-U.S.S. Kleinsmith, APD 134, ex-DE 718)

1,400 tons standard, (2,130 tons Displacement:

1,400 tolls stalled (2,130 tolls full load)
300 (w.l.), 306 (o.a.)×37×
123 feet Dimensions: -5 inch, 38 cal d.p., 6-40 Guns:

mm. AA.
G.E. turbines, electric drive. 2
shafts. S.H.P.: 12,000=23 kts. Machinery: Boilers:

shafts. 5.H.P.: 12,000= 2 Express 350 tons 5,500 miles at 15 kts. 204+162 troops Oil fuel: Radius: Complement:

Former destroyer escorts converted by the U.S.A. and officially rated as High Speed Transports, Can carry four LCVP (Landing Craft, Vehicle Personnel). Kleinsmith was transferred from the United States Navy to Nationalist China at Tsoyin. Taiwan, on



TIEN SHAN

16 May 1960. Her new name Tien Shan means Heavenly Mountain. Pennant No. 315. Gantner and Walter B. Cobb were transferred to Taiwan on 15

Mar. 1966 at San Francisco, California, but Walter B. Cobb was lost at sea while under tow to Taiwan, and was replaced by Bull. Four more, Donald W. Wolf, Kinzer, Kiine and Truxton, were also transferred in 1966, and two more are to be transferred.

ESCORT PATROL VESSELS

2 Ex-U.S. PCE Type

WEI YUAN (ex-Yung Hslang, ex-PCE 869, 6 Feb. 1943) YUNG TAI (ex-U.S.S. PCE 867, 3 Dec. 1942)

640 tons standard (903 tons full load)
180 (w.l.), 184½ (o.a.)×33×9½ feet (max.)
2—3 inch d.p., 3—40 mm. AA., 6—20 mm. AA., 4
D.C.T. Displacement: Dimensions:

Diesel, 2 shafts, B.H.P.; 1,800=17 kts. Machinery:

Complement: General

Launch dates above. Built by Albina Engine and Machinery Works, Portland, Ore. One 3 inch, 50 cal gun was added in 1955, Rated as gunboats. Pennant Nos.: Wei Yuan 42, Yung Tai 62 (ex-41). These may be replaced by two other vessels (see Genzral notes under MSF Type below) Yung Tai was demaged in action on 14 Nov. 1965, see Loss at bottom of column.



YUNG TAI

1963. Official

2 Ex-U.S. MSF Type

CHU YUNG (ex-U.S.S. Waxwing, MSF 389) PCE 65 WU SHENG (ex-U.S.S. Redstart, MSF 378) PCE 66

890 tons standard (1,250 tons full load)
215 (w.l.), 221½ (o.a.)×32½×10¼ (max.) feet
2—3 inch, 50 cal. (single), 4—40 mm. AA. (2 twin),
4—20 mm. AA. (2 twin)
1 ASW projector, 1 triple ASW torpedo tube mounting,
2 D.C. projectors, 2 D.C.T.
2 shafts. B.H.P.: 3,530=18 kts.
95 Displacement: Dimensions: Guns: A/S weapons:

Machinery

Complement:

General

General Former U.S. Fleet Minesweepers of the "Auk" Class. Steel hulled. Built by American S.B. Co., Cleveland, Ohio (Waxwing) and Savannah Mach. & Foundry Co. (Redstart). Launched and completed in 1964-65. Minesweeping gear removed so that the ships can be employed as Escort Patrol Vessels. Redstart and Waxwing were transferred on 22 July 1965 and 18 Nov. 1965, respectively, at Seattle, Washington. Two other names are officially listed: I Men (PCE 63) and Chin Lan) (PCE 64).

Chien Men (ex-U.S.S. Toucan, MSF 387) PCE 45, transferred from the U.S. Navy to the Taiwan Navy on 22 Dec. 1964, was sunk by Communist Chinese warships south of Quemoy on 6 Aug. 1965.

FLEET MINESWEEPERS

6 Ex-U.S. MSF (ex-AM) Type

47 YUNG CHIA (ex-U.S.S. Implicit. AM 246. 6 Sep. 1943)
48 YUNG HSIU (ex-U.S.S. Pinnacle, AM 274, 11 Sep. 1943)
43 YUNG SHENG (ex-U.S.S. Lance, AM 257, 10 Apr. 1943)
49 YUNG SHOU (ex-U.S.S. Pivot, AM 276, 11 Nov. 1943)
44 YUNG SHUN (ex-U.S.S. Logic, AM 258, 10 Apr. 1943)

5 rated as Minesweepers

50 YUNG FENG (ex-U.S.S. Prime, AM 279. 22 Jan. 1944)

(Minelayer)

Displacement: Dimensions: Guns: Machinery: Complement:

650 tons standard (945 tons full load) 180 (w.l.), 184½ (o.a.)×33×9½ feet (max.) 1—3 inch d.p., 3—40 mm. AA., 6—20 mm. AA. Diesel. 2 shafts. B.H.P.: 1,710=14.8 kts.

General

All MSF (ex-AM) type fleet minesweepers acquired from the U.S. Navy, Launch dates above. Yung Feng is fitted for minelaying with tracks on her stern and is rated as a coastal minelayer. Yung Hsing served as a maritime customs vessel. Yung Ting was converted to a survey ship, see later page. Disposals

Disposals
Sister ships Yung Chun No. 52 (ex-U.S.S. Gavia. AM 363), Yung Ho, No. 53 (ex-U.S.S. Delegate, AM 217) and Yung Kang, No. 54 (ex-U.S.S. Elusive, AM 225), all rated as gunboats, amd Yung Hsing, No. A 4 (ex-U.S.S. Embattle, AM 226) in the Coastguard, were scrapped in 1964. Yung Ning, No. 46 (ex-U.S.S. Magnet, AM 260), rated as a minesweeper, was discarded in 1963. Loss

Yung Chang (ex-U.S.S. Refresh, AM 287) 51, of this class, rated as a gunboat, was sunk off Southern China coast by a Chinese Communist escort ship. Yung Tai, 62, was damaged in the same encounter. The Nationalist (Taiwan China) claimed four Communist gunboats sunk in the same battle.



YUNG CHANG

1962. Official

SUBMARINE CHASERS

14 Ex-U.S. PC Type

14 Ex-U.S. PC Type

105 FUKIANG (ex-Hwangpu, ex-U.S. PC 492), 29 Dec. 1941
108 HSIANG KIANG (ex-U.S. PC 786) 6 Feb. 1943
109 CHIH KIANG (ex-U.S. PC 1078), 8 Aug. 1942
111 LI KIANG (ex-U.S. PC 1208), 15 Sep. 1943
113 KUNG KIANG (ex-U.S. PC 1233), 11 Jan. 1943
114 PO KIANG (ex-U.S. PC 1254), 31 Oct. 1942
115 CHUNG KIANG (ex-U.S. PC 1262), 27 Mar. 1943
116 CHING KIANG (ex-U.S. PC 1268), 3 July 1943
117 TUNG KIANG (ex-U.S.S. Placerville, ex-PC 1087)
120 HSI KIANG (ex-U.S.S. Blacerville, ex-PC 1149)
122 PEI KIANG (ex-U.S.S. Susanville, ex-PC 1142)
123 LIU KIANG (ex-U.S.S. Kanford, ex-PC 1169)
124 HAN KIANG (ex-U.S.S. Willedgeville, ex-PC 1163)
Displacement: 280 tons standard (450 tons full load)
Dimensions: 173½ (o.a.)×23×10½ (max.) feet
Guns: 1—3 inch, 50 cal., 1—40 mm. AA., 5—20 mm. AA.
Machinery: Diesel. B.H.P.: 2,880=20 kts.
Oil fuel: 60 tons
Radius: 5,000 miles at 10 kts.

General
Launch dates above. Hanford Placerville Examples and Variation and California.

General

Launch dates above, Hanford, Placerville, Escondido and Vandalla were transerred

taunch dates above, Hantora, Piacefville, Escondido and Vandalla were tranferred from the United States Navy to the Chinese (Taiwan) Navy on 15 July 1957. Milledgeville was transferred at Key West, Florida, in July 1959.

Chien Fang and Wu Sung were discarded in 1951-52, and Chialing (ex-U.S. PC 1247) in 1964. Yuan Klang was officially deleted from the list in 1966.

Chang Klang (ex-U.S. PC 1232) PC 118, was sunk by Communist China war-ships south of Quemoy on 6 Aug, 1965.



CHUNG KIANG

United States Navy, Official

9 Ex-U.S. SC Type

SC 503 (ex-103 Chu Chien, ex-SC 698) Ex-SC 722 Ex-SC 723 SC 502 (ex-Chu Chien, ex-SC 708) Ex-SC 518 Ex-SC 648 Ex-SC 637 Ex-SC 703 Sec. 703 Ex-SC 723
95 tons standard (148 tons full load)
107\frac{1}{2} (w.l.). 110\frac{1}{2} (o.a.)\times 17\times 6\frac{1}{2} \text{ feet}
1-40 mm. AA.
Diesel. 2 shafts. B.H.P.; 800=15\frac{1}{2} \text{ kts.}
28 Displacement: Displacement: 95 tons standard (148 tons full load)
Dimensions: 107½ (w.l.). 110g (o.a.)×17×6½ feet
Guns: 1—40 mm. AA.
Machinery: Diesel. 2 shafts. B.H.P.: 800=15½ kts.

Disposals
SC 501 (ex-101) Chu Chien, ex-SC 704) was for disposal in 1961. Min Chiang,
No. 07 (ex- Fu Ling, ex-No. 9, ex-Hal Ta, ex-No. 402) was scrapped in 1964.

COASTAL MINESWEEPERS

6 Ex-U.S. MSC Type

YUNG AN, MSC 56 (ex-U.S.S. MSC 140)
YUNG CHI, MSC 160 (ex-U.S.S. MSC 300)
YUNG CHUAN, MSC 58 (ex-U.S.S. MSC 278)
YUNG HSIN MSC 59 (ex-U.S.S.MSC 302)
YUNG NIEN MSC 57 (ex-U.S.S. MSC 277)
YUNG PING, MSC 55 (ex-U.S.S. MSC 123)

335 tons light (378 tons full load)
138 (pp.), 145 (o.a.)×27×8½ feet
2—20 mm, AA.
2 G.M. diesels 2 shafts. B.H.P.: 880=14 kts.
40 (5 officers, 35 men) Displacement: Dimensions: Guns: Machinery:

Complement:

General

General

"Bluebird" class non-magnetic and wooden hull construction. Built in U.S.A. MSC
123 and MSC 140 were transferred to Taiwan on 4 June 1955. MSC 227, launched
on 30 June 1958, and MSC 278, launched on 1 Aug. 1958, both built by the Tacoma
Boatbuilding Co., were transferred at Seattle on 10 June and 10 July, respectively,
in 1959. MSC 302 transferred on 5 Mar. 1965, and MSC 300 on 15 Apr. 1965.
MSC 306 and MSC 307 are being built for transfer to Taiwan China by U.S.A.



YUNG NIEN

1963. Official

542 CHIANG YUNG (ex-No. 19)

2 Ex-Japanese AMS Type

CHIANG (ex-No. 22)

Displacement: Dimensions:

222 tons normal 98×19½×7½ feet 2—40 mm., 2—25 mm., 2 M.G. Diesel. Speed 9 kts.

Guns: Machinery:

General Former Japanese auxiliary minesweepers. Built in Japan in 1942-43. (The United States minesweeping boat MSB 4 was transferred to Taiwan under MAP in Dec. 1961.)

GUNBOATS

I Ex-U.S. PGM Type

117 CHU KIANG (ex-U.S.S. PGM 31, ex-PC 1567)

295 tons standard (470 tons full load)
173 (o.a.), 170 (w.l.)×23×11 (max.) feet
1—3 inch, 1—40 mm. AA., 4—20 mm. AA.
2 G. M. diesels. B.H.P.: 2,800=20 kts. Displacement: Guns: Machinery: Complement:

Built by Leatham D. Smith S.B. Co., Sturgeon Bay, Wis. Laid down on 18 July 1944, launched on 23 Sep. 1944 and completed on 17 Jan. 1945. Transferred from the U.S. Navy in 1954, 103 Ling Chiang (ex-Tung Ting, ex-U.S.S. PGM 13) was torpedoed and sunk by Chinese Republican motor torpedo boats on 10 Jan. 1955. 101 Ying Chiang (ex-Pao Ying, ex-U.S.S. PGM 20) was torpedoed by Republican motor torpedo boats on 20 Jan. 1955, and was subsequently scrapped as beyond economical repair.

Disposals
Sister ship Ou Chang, No. 102 (ex-Hung Tse, ex-U.S.S. PGM 26), Chu Chiang, No. 106 (ex-Ya Ling, ex-49, ex-Hai Hung, SC 401), ex-Japanese type and the very old gunboat Chu Kuan, No. 75, Japanese built, were scrapped in 1964, The old gunboat Yung Hsiang, also Japanese built and the old auxiliary minelayer Chieh 29 (ex-Kuroshimu), Japanese built, were previously deleted from the active list.



CHU KIANG

1962, Official

DOCK LANDING SHIP (LSD)

I Ex-U.S. "Ashland" Class

TUNG HAI LSD 191 (ex-U.S.S. White Marsh, LSD 8)

Displacement: Dimensions:

4,790 tons standard (8,700 tons full load) 454 (w.l.), $457\frac{1}{3}$ (o.a.) \times 72 \times 18 feet 12—40 mm, AA Skinner Unaflow, 2 shafts 1.H.P.: 7,400=15·6 kts. 2, of 2-drum type 326 (total accommodation)

Guns: Machinery:

Boilers:

Complement:

General

Built by Moore Dry Dock Co. Launched on 19 July 1943. Designed to serve as parent ship for landing craft and coastal craft. Transferred from the U.S. Navy to the Chinese (Taiwan) Navy on 17 Nov. 1960 at Long Beach, California, under the Military Aid Programme.



TUNG HAI

1965. Official

REPAIR SHIPS

335 SOUNG-SHAN (ex-LST 202, ex-U.S.S. LST 1030)

1,625 tors light (4,080 tons full load) 316 (w.l.), 328 (o.a.) \times 50 \times 14 feet Diesel, 2 shafts, B.H.P.: 1,700=11 kts, 2,100 tons 211 Displacement: Dimensions: Machinery: Cargo capacity: Complement:

Former U.S. tank landing ship converted into a repair ship. Built at Boston Navy Yard. Laid down on 27 May 1944, launched on 25 June 1944 and completed on 19 July 1944.

Ex-VULCAIN (ex-U.S.S. Agenor, ARL 3, ex-LST 490)

1,625 tons light (4,080 tons full load)
328 (o.a.)×50×14½ feet
8—40 mm. AA.; 8—20 mm. AA.
2 diesels. B.H.P.: 1,700=10.8 kts.
1,060 tons
6,000 miles at 9 kts. Displacement: Dimensions: Guns: Machinery: Oil fuel: Radius:

General

General Former U.S. ocean tank carrier with bow doors. Built by Kaiser Co., Inc., Vancouver, Wash. Laid down on 24 Jan. 1943. Launched on 3 Apr. 1943. Completed on 20 Aug. 1943. Transferred from the U.S. Navy to France in 1951 for service in Indo-China Returned to the U.S.A. by France, and then transferred to (Taiwan) China by the U.S.A. on 15 Sep. 1957.

TANK LANDING SHIPS

27 Ex-U.S. LST Type

				/ /			
LOT	216 CHUNG KUANG (T21 2211.va	503	١		Ex-U.S.S. LST 5	20
F21	TIE CHONG KOKNO (EX-0.3.3. L37	303	Laurence 10	T 1001)		
LST	226 CHUNG SHIH (ex-	U.S.S. Sagadan	oc C	ounty, L	1 10717		
LST	227 CHUNG MING (ex-	U.S.S. Sweetwa	ster	County, I	LS7 1152)	EX-U,5.5. LST 5	78
LST	231 CHUNG YEA (ex-L	J.S.S. Sublette	Cou	nty, LST	1144)		
219	CHUNG CHIH (ex-U.S.	S Rerkeley "	223	CHUNG	FU		
210	County LST 279)			(ex-U	S.S. Iron	County, LST 84	(0)
			201			-LST 755)	- /
221	CHUNG CH'UAN	A4. 4 MW	201	CHUING	1161	-231 7337	
	(ex-Wan Ylu, ex-Lu	YI, ex-LSI	217	CHUNG	1421	157 557	
		640)	204	CHUNG	AC HOI I	ex-LST 557)	
224	CHUNG CHENG	7	208	CHUNG	SHUN	(ex-Wan Kuo, (
	(ex-U.S.S.Lafayette C	County, LST				LST 73	(2)
	(0x-010101010)	859)	209	CHUNG	LIEN (a)	x-LST 1050)	
201	CHILDIC CHI Jay 157			CHUNG	MING		
	CHUNG CHI (ex-LST		220			ex-U.S.S. Brad	lav
	CHUNG CHIEN (ex-L	11 /10)	440	CHONG	300	County, LST 40	101
225	CHUNG CHIANG						10)
	ex-U.S.S. San Bernadi					k-LST 537)	
		LST 1110) 2	222	CHUNG	SHENG (ex-LST 1033)	
230	CHUNG BANG		229	CHUNG	WAN	(ex-U.S.S. Dul	kes
	4.0.00					County, LST 73	5)
		7	215	CHUNG	YU (ex.V	Van LI, ex-LST 33	
						ex-LST 574)	-,
	5 1 1						
	Displacement:	1,653 tons sta	inga	70 (4,000	tons run	1000)	
	Dimensions:	316 (w.l.), 3	78 I	(o.a.) × 51	u× t+ (m	ZX.) Teet	
	Guns:	6-40 mm. A	۱A.,	12-20	mm. AA.		
	Machinery:	Diesel. 2 shaf	ts.	B.H.P.: 1	,700=11	kts.	
	Complement:	119					

General
Former United States tank landing ships LST 218, 400 and 735 were transferred to Nationalist China at San Diego, in July 1955 and 1960 (Dukes County)
LST 216 was transferred from United States Navy at San Diego 29 April 1955, and
LST 226 and LST 227 were transferred at Seattle on 21 Oct. 1958. LST 520, 535 and 578 were transferred to Taiwan China in Sep. 1958. LST 231 was transferred at Charleston, S.C., on 21 Sep. 1961.
An LST was torpedeed and sunk by Chinese Republican torpedo boats off Quemoy on 25 Aug. 1958.
LST 208 Chung Shun (ex-LST 993) Is believed to have been lost, since a newly acquired LST has been numbered 208. Five of above (200, 202, 308, 313, 315) were acquired from the merchant service in 1955. LST 313 Chung Kung (ex-Chung ex-LST 945) was scrapped in 1956. LST 207 Chung Cheng reported to be scrapped in 1958.
LST 213, 224 and 225 were transferred from the United States Navy in 1958.



CHUNG SHIH

1962. Official

I AGC Type

KAO HSIUNG (AGC 1) Amphiblous Force Flagship It is reported that the named as above in 1964. amphibious force flagship AGC1 has been acquired, and

MEDIUM LANDING SHIPS

18 Ex-U.S. LSM Type

241 MEI CHIN (ex-LSM 15 245 MEI HENG (ex-LSM 4	
248 MEI HO (ex-LSM 13)	253 MEI PING (ex-U.S.S. LSM)
244 MEI PENG (ex-LSM 4:	
246 MEI HUNG (ex-LSM	
247 MEI SUNG (ex- LSM	457) 256 MEI LO (ex-U.S.S. LSM 362)
243 MEI I (ex-LSM 285)	Ex-LSM 422
249 MEI CHIEN (ex-LSM -	——) Ex-LSM 471
250 MEI HWA (ex-LSM -	—) Ex-LSM 478
Displacement:	743 tons standard (1,095 tons full load)
Dimensions:	196 $\frac{1}{2}$ (w.l.), 203 $\frac{1}{2}$ (o.s.) \times 34 $\frac{1}{2}$ \times 7 $\frac{1}{2}$ feet
Guns:	2-40 mm. AA., 4-20 mm. AA.
Machinery:	Diesel. 2 shafts. B.H.P.: 2,800=12 kts.
Complement:	59 (Mel Lo 6 officers and 46 men)

General
Mel Lo 242 (ex-LSM 157) was destroyed by Chinese Communist artillery and beached on Quemoy Island on 8 Sep. 1958. Mel Wen, 254, and Mel Han, 255, were transferred from the United States Navy at Seattle, Wn., on 6 Feb. 1959. LSM 422, LSM 471 and LSM 478 were also loaned to Nationalist China by the U.S.A. in 1959. Mel Lo 256 (ex-LSM 362) was transferred at Bremeston, Wash, in May 1962.

Disposal

Lu Shap (ex-Independ 157 No. 172) which was a state of the control of the contro

Disposal Lu Shan (ex-japanese LST No. 172), which went aground and was found to beyond repair, is reported to have been removed from the effective list.



MEI KUN

1962, Official

LANDING CRAFT

5 LSIL Type

(M) 630) 261 LIEN CHU (ex-LCI (G) 233)
(5) 631) 262 LIEN LI (ex-LCI (G) 417)
263 LIEN SHENG (ex-LCI (G) 418)
227 tons standard (387 tons full load)
159×23½×5½ feet
2—20 mm. AA.
Diesel. 2 shafts. B.H.P.: 1,320=14 kts. 264 LIEN CHENG (ex-LCI (M) 630) 265 LIEN HUA (ex-LCI (G) 631)

Displacement:

Machinery:

Complement: General

General
Former United States Landing Craft. Infantry (Gunboat) and Landing Craft.
Infantry (Mortar). Armament varies. China (Taiwan) received ex-U.S. LSIL 818,
1017, 1092 from the United States under MDAP (they were formerly on loan to
France from the U.S.A. for service in Indo-China) to be used only for cannibalization.



LIEN HUA

1963, Official

3 LSSL Type

271 LIEN CHIH (ex-U.S.S. LSSL 56)

LSSL 56) 272 LIEN JEN (ex-U.S.S. LSSL 81)
273 LIEN YUNG (ex-U.S.S. LSSL 95)
227 tons standard (387 tons full load)
153 (w.l.), 158 (o.a.)×28½×5½ feet
6—40 mm. AA. (twin), 10 rocket launchers
G. M. diesels. 2 shafts. B.H.P.: 1,320=14·4 kts.
78 Displacement: Dimensions: Guns: Machinery: Complement:

General

These ex-U.S. Navy LSSL's formerly LCS(L) 3, Landing Craft Support (Large) were transferred to China (Taiwan) at Yokosuka, Japan, om 19 Feb. 1954. China (Taiwan) received ex-U.S. LSSL 2 and 28 from the United States under MDAP (they were formerly on loan to France from the U.S.A. for service in Indo-China) to be used cannibalization.

30 LCU (ex-LCT) Type

405 HO CHANG (ex-LCT 512) 406 HO CHEN (ex-LCT 1145) 403 HO CHENG (ex-LCT 1143) 407 HO CHIH (ex-LCT) 401 HO CHUN (ex-LCT 892) 404 HO CHUNG (ex-LCT 849) 402 HO CH'UNG (ex-LCT 1213)

Displacement: Dimensions:

402 HO CH'UNG (ex-LCI 143 tons standard (285 tons full load) 114½×32¾×3¼ feet 2—20 mm. AA. Diesel. 3 shafts. B.H.P.: 675=10 kts. Guns: Machinery:

Complement:

General Additional landing craft have been transferred, including 5 LCU under MDAP (craft formerly on loan to France from the U.S.A. for use in Indo-China). Those named so far are ex-LCU 290, 292, 638, 700, 1225, 1271, 1596, 1597, 1598, 1600 and 1601. In 1964 ex-LCU 1212, 1218, 1224, 1367, 1397, 1429 and 1452 were transferred by the U.S.A. under MAP.

SURVEY SHIPS

362 YANG MING (ex-45 Yung Ting, ex-U.S.S. Lucid, AM 259)
Displacement: 650 tons standard (945 tons full load)
Dimensions: 180 (w.l.), 184\(\frac{1}{2}\) (0.a.)\(\times\)33\(\times\)3\(\times\)1 (max.) feet
Machinery: Diesels. 2 shafts. B.H.P.: 1,710=14·8 kts.

Former United States fleet minesweeper. Launched on 5 June 1943. Converted into

a surveying ship. 266 LIEN CHING General

Former United States landing craft of the LSIL type converted into a survey ship.

See particulars above.

Disposals

The surveying ships Ching Tien, 361, and Chiao Shan, 861, were officially stricken from the list in 1963 (discarded).

PATROL CRAFT

521 HAI LI	546 CHIANG LIEN	591 P'AO 111	635 P'AO 5
522 HAI NING	547 CHIANG P'ING	592 P'AO 112	636 P'AO 6
523 HAI YAO	548 CHIANG FENG	593 P'AO 113	637 P'AO 7
524 HAI WEI	549 CHIANG KUNG	594 P'AO T14	638 P'AO 8
525 HAL AN	550 CHIANG LUN	595 P'AO 115	639 P'AO 9
526 HAI CHING	551 CHIANG CH'ENG	596 P'AO 116	640 P'AO 10
542 CHIANG YUNG	581 P'AO 101	631 P'AO 1	641 P'AO 11
543 CHIANG HSIU	584 P'AO 104	632 P'AO 2	642 P'AO 12
544 CHIANG TING	587 P'AO 107	633 P'AO 3	643 P'AO 13
545 CHIANG MING	588 P'AO 108	634 P'AO 4	646 P'AO 16

6 Ex-HDML Type

681 FANG I 682 FANG SAN 684 FANG SEU 685 FANG CHI 686 FANG LIU 687 FANG PA Displacement: Dimensions:

46 tons standard (54 tons full load)
72×15§×4½ feet
1—40 mm., 1—20 mm., 4 M.G.
2 Diesels. B.H.P.: 320=11 kts. General Guns: Machinery:

Former harbour defence motor launches. Built in Great Britain in 1942-43. Fang 3 and Fang 8 were sunk in 1950.

2 MTB Type

FU CHOU (PT 511)

HSUEH CHIH (PT 512)

General

Built by Mitsubishi Zosen Co., Japan in 1957. Armed with 18-inch torpedo tubes and 1-20 mm. AA. gun aft.

OILERS

309 OMEI (ex-U.S.S.Maumee)
Displacement: 4.990 tons standard (14,500 tons full load)
Dimensions: 475\frac{1}{2} (o.a.)\times 56\times 10 (mean), 26\frac{1}{4} (max.) feet
Guns: 5-3 inch, 2-40 mm. AA., 8-20 mm. AA.,
Machinery: Diesel. 2 shafts. B.H.P.: 5,000=14 kts.

General Built at Mare Island Yard, U.S.A. Capacity 7,850 tons. Launched on 17 Apr. 1915.



OMEL

1963. Official

307 CHANG PEI (ex-U.S.S. Pecatonica, AOG 57)
Displacement: 1,850 tons light (4,335 tons full load)
Measurement: 2,575 tons deadweight
Dimensions: 292 (w.l.), 310\frac{1}{2} (o.a.)\times48\frac{1}{2}\times15\frac{1}{2} (max.) feet
Guns: 4—3 inch d.p., 50 cal.
Machinery: Diesel-electric, 2 shafts. B.H.P.: 3,300=14 kts.

General

General
Former U.S. petrol carrier of the "Patapsco" class. Built by Cargill, Inc., Savage,
Minn, Laid down on 6 Dec, 1944. Launched on 17 Mar. 1945. Transferred to Taiwan
China under MAP on 24 Apr. 1961 at Tsoying, Taiwan. Crew 124.

306 KUAI CHI (ex-Soviet Tuatse)

Petrol tanker, Captured in 1954, Commissioned in Nationalist Navy in Feb. 1956.

304 SZU MING (ex-U.S.S. YO 198)

Displacement: 1,400 tons full load
Dimensions: 174 (o.a.)×32×15 feet
Guns: 1—25 mm., 2—20 mm., 2
Machinery: Diesel. B.H.P.: 560=11 kts. 2 M.G.

Built in U.S.A. in 1945 by Manitowoc S.B. Co., Wis. Capacity 6,570 barrels.

302 HSIN KAO (ex-Tai Hwa, ex-U.S.S. Towaliga, AOG 42)

700 tons standard (2,700 tons full load) 1,453 tons deadweight 212½ (w.l.), 220½ (o.a.)×37×12½ feet 1—3 inch, 2—40 mm. AA., 3—20 mm. AA. Diesel. 1 shaft. B.H.P.: 800=10 kts. Displacement: Measurement: Dimensions: Guns: Machinery:

Ex-U.S. TI-M-A2 type, "Mettawee" class. Launched by East Coast Shipyards on 29 Oct. 1944. Sister ship Yu Chuan, No. 303 (ex-Wautanga, AOG 22, ex-Conrol, ex-U.S.S. Sakatonchee, YOG 52) and the oiler Ho Lan, No. 305 (ex-Polish oiler Praca) were scrapped in 1964.

311 WULING (ex-Shirasaki)

Displacement: 950 tons
Dimensions: 203×31½×10½ feet
Guns: 1—3 inch, 1—40 mm. AA., 8—25 mm. AA., 4 M.G.

Machinery: 2 diesels. B.H.P.: 600=15 kts.

Whin Destroyer hull.

313 TIEN CHU

315 CHIU HUA 317 CHUNG SHAN

KW 10

General

Displacements and other particulars vary in individual ships. Tien Chu is ex-Polish cargo ship Prezedent Gottwald captured by China while trading with the Communists. Wu I (ex-No. 16), Kun Lun, 312 (ex-Hai Chi, ex-Japanese Kaiki), Nan Hu, 312 (ex-S.S. Tai Hui, ex-S.S. Steelmotor and Ex-Japanese No. 172 were discarded in 1963.

TUGS

342 TA WU (ex-Wu Kung, ex-Pel Chi No. 1, ex-LT) 343 TA MING (ex-LT 300)

570 tons light (967 tons full load)
149 (0.a.)×33×15 feet
1—40 mm., 2—20 mm.
Reciprocating. Oil fuel. H.P.: 1,200=12 kts. Displacement: Displacemen Dimensions: Guns: Machinery:

Built in U.S.A. in 1943, Ta Ch'ing reported decommissioned on 1 June 1951.

345 TA YU (ex-LT 310) 347 TA SHUEH (ex-U.S.S. Tonkowa, ATA 176)

Displacement:

Dimensions: Guns: Machinery: General

534 tons standard (835 tons full load)
1333 (w.l.), 143 (a.a.)×338×134 feet
2—25 mm., 2 M.G. (Ta Sueh 1—3 inch)
Diesel-electric. H.P.: 1,500=12·5 kts.

General

Ta Yu is a former U.S. Army tug. Ta Shueh is a former U.S. Navy tug of the

"Marikopa" class built by Levingstone S.B. Co., Orange, Texas, completed on 19

Aug. 1944, and transferred on 5 Apr. 1962. (There are also the small harbour
tugs YTL 427, YTL 428, YTL 454, YTL 584 and YTL 585 transferred by the U.S.A.
in 1963-64.) Pu To, 341 (ex-ATR 26) was discarded in 1963, and Ta Hung, No.
334 (ex-LT 530) in 1964.

TANZANIA

COASTAL PATROL BOATS

4 Ex-German KW Type

KW 4 KW 5 KW 9

> 112 tons 78½×22×9 feet 1—20 mm. AA Displacement: Dimensions: Guns 1—20 mm. AA. 1 diesel, B.H.P.; 150=9 kts. Machinery:

General

Given by West Germany (Shipped on 8 Dec. 1963). See full particulars on page 109, column 2.

ROYAL THAI NAVY

Administration

Commander-in-Chief of the Navy: Admiral Charoon Chalermtiarana

Chief of the Naval Staff: Admiral Thavil Rayananon

Naval Attaché in London: Captain Ampon Nabangchang

Naval Attaché in Washington: Captain Supa Gajaseni

Personnel

1966: Navy, 18,000 (2,000 officers and 16,000 ratings)

Marine Corps, 3,330 (130 officers and 3,200 men)

FRIGATES

Pennant No. DE 3 (ex-1)

Builders Western Pipe & Steel Co.

Launched 12 Sep. 1943 Completed 30 May 1944

Ex-U.S. DE Type I "Bostwick" Class

PIN KLAO (ex-U.S.S. Hemminger, DE 746)

Displacement:

Dimensions:

A/S weapons:

1,240 tons standard (1,900 tons full load)
306 (o.a.)×37×14 feet
3—3 inch, 50 cal d.p.; 6—40 mm. AA.
6 ASW torpedo tubes (2 triple mounts), 8 D.C.T.
G.M. diesels with electric drive.
2 shafts. B.H.P.; 6,000=20 kts.
300 tons

Machinery:

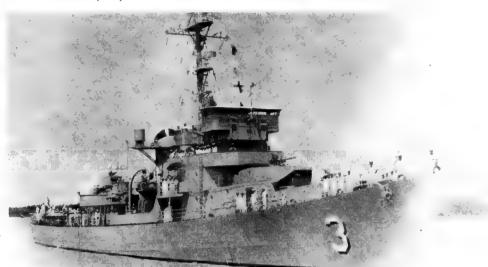
Oil fuel: Radius:

300 tons 11,500 miles at 11 kts

Complement:

General
Former United States patrol vessel (destroyer escort)
of the DE type, "Bostwick" class, Transferred from the
United States Navy to Thailand at New York Naval
Shipyard in July 1959 under the Mutual Defence Assistance Programme and given the new Thai name Pin Klao.

The 3—21 inch torpedo tubes were removed, and the 4—20 mm. AA. guns were replaced by 4—40 mm. AA. The six ASW torpedo tubes were fitted in 1966.



PIN KLAO

1966, Royal Thai Navy, Official

PRASAE (ex-U.S.S. Gallup, PF 47) TAHCHIN (ex-U.S.S. Glendale, PF 36)

Pennant No.

Builders Consolidated Steel Corpn., Los Angeles Consolidated Steel Corpn., Los Angeles

Laid down 18 Aug. 1943 6 Apr. 1943

17 Sep. 1943 28 May 1943

Completed 29 Feb. 1944 1 Oct. 1943

Ex-U.S. PF Type 2 "Prasae" Class

Displacement:

Dimensions: Guns:

A/S weapons:

Machinery:

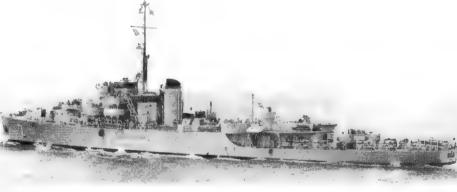
Oil fuel: Radius: Complement:

General

Photographs

1,430 tons standard (2,100 tons full load)
304 (o.a.)×37½×13¾ feet
3—3 inch, 50 cal. d.p.; 2mm. AA.; 9—20 mm. AA.
8 D.C.T. Triple expansion. 2 shafts. I.H.P.: 5,500=19 kts.
2 small water tube 3-drum type 685 tons
9,500 miles at 12 kts.

Former United States patrol frigates of the "Tacoma" class, or PF type. Delivered to the Royal Thai Navy on 29 Oct. 1951. They were of similar design to the British frigates of the "River" class.



PRASAE

1965. Royal Thai Navy. Official

BANGPAKONG (ex-Gondwana, ex-H.M.S. Burnet)

I Ex-British "Flower" Class

A photograph of *Tahchin* appears in the 1953-54 to 1964-65 editions.

Displacement:

1,060 tons standard (1,350 tons

Dimensions:

1,060 tons standard (1,350 tons full load)
193 (pp.), 203\(\frac{1}{2}\) (o.a.)\(\times 33\times 1-3\) inch, 50 cal. d.p.; 1—40 mm. AA.; 6—20 mm. AA.
4 D.C.T.

Guns:

A/S weapons:

Machinery:

4 D.C.1. Triple expansion. I.H.P.: 2,880 =16 kts, 2, of 3-drum type 282 tons

Oil fuel: Radius:

4,800 miles at 12 kts.

Complement:

Genaral
Former British corvette (later reclassified as frigate) of the "Flower" class which served in the Indian Navy before she was transferred to the Royal Thai Navy. Sister ship Prasae (ex-Sind, ex-Betons) was lost during the Korean War on 13th January, 1951. Gunnery
The 4 inch gun was replaced by a 3 inch, 50 calibre, dual purpose gun. One 20 mm. AA, gun was replaced by a 40 mm. AA, gun in 1966. Genaral

Pennant No. PF 4

Builders Ferguson Bros. Ltd., Port

Laid down 2 Nov. 1942

Launched 31 May 1943

Completed 23 Sep.



BANGPAKONG

Royal Thai Navy, Official

MAEKLONG

Pennant No

Builders Uraga Dock Co., Japan

Frigates—contd.

Laid down

Launched 27 Nov. 1936

Completed June 1937

I Sloop Type

Displacement:

1,400 tons standard (2,000 tons

Dimensions: Guns:

1,400 tons standard (2,000 tons full load)
269×34×10½ feet
4.4-7 inch, 3.-40 mm, AA.
3-20 mm, AA.
Triple expansion, 2 shafts.
1,H.P.: 2,500=14 kts.

Machinery: Boilers: Oil fuel:

2 water-tube 487 tons 8,000 miles at 12 kts.

Radius: Complement: 155 (as training ship)

General
Ordered in 1934. Designed as a dual-purpose sloop and torpedo boat. Fitter for minesweeping, Employed as a training ship. The 4—18 inch torpedo tubes were removed. The 40 mm. AA. guns and 20 mm. AA. guns were each increased from two to three in 1966. Sister ship Tachin was heavily damaged during the Second World War on 1 June 1945 and eventually scrapped.



MAEKLONG

1966, Royal Thai Navy, Official

ESCORT MINESWEEPER

PHOSAMPTON (ex-H.M.S. Minstrel)

Pennant No. MSF 1

Builders

Laid down 1943

Launched

I Ex-British "Algerine" Class

Displacement:

1,040 tons standard (1,335 tons

full load)
225 (o.a.)×35½×10½ feet
1—4 inch, 6—20 mm, AA. Dimensions: i—4 inch, 6—20 mm. AA. 4 D.C.T. Triple expansion. 2 shafts. 1.H.P.: 2,000=16 kts. 2, of 3-drum type 270 tons Guns: A/S weapons:

Machinery:

Boilers: Oil fuel: Radius:

270 tons 5,000 miles at 10 kts. 3,000 miles at 15 kts.

Complement: 103

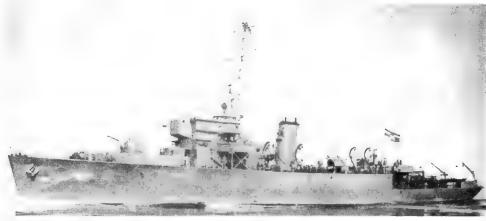
General General
Former British "Algerine" class minesweeper of oceangoing type capable of fleet sweeping and escort duties. Armament

The 20 mm. AA. guns were increased from 3 to 6, and the D.C.T.s, from 2 to 4 in 1966.

Redfern Construction Co.

1944 5 Oct.

Completed 1945



PHOSAMPTON

1965, Royal Thai Navy, Official

2 Coast Defence Type

Displacement:

886 tons standard (1,000 tons full load)
160 (pp.), 173 (o.a.)×37×103

Dimensions:

Guns: Armour: feet 2—6 inch, 4—3 inch AA., 2—40 mm. AA., 3—20 mm. AA Side $2\frac{1}{2}$ " (amidship), $1\frac{1}{4}$ " ends, barbette rings, $2\frac{1}{2}$ "; C. T. $4\frac{1}{4}$ " Upper deck, $1\frac{1}{2}$ "- $\frac{1}{2}$ " Triple expansion. 2 shafts. I H.P.: 850=12 kts.

feet

Machinery:

Boilers:

2 oil-burning water-tube, work-ing pressure 225 lbs. per sq. in. 96 tons

Oil fuel:

2.000 miles at 10 kts. 103

Radius: Complement:

It was officially stated in 1966 that both ships now have 2—6 inch, 4—3 inch AA., 2—40 mm. AA. and 3—20 mm AA. guns.

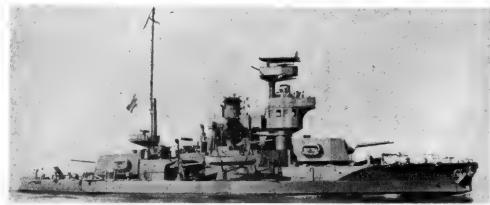
Photographs
A photograph of Sukothal appears in the 1962-63 to 1965-66 editions.

ARMOURED GUNBOATS

RATANAKOSINDRA SUKOTHAI

Builders Armstrong, Newcastle Vickers Armstrong Laid down Sep. 1924 Dec. 1928

Launched 21 Apr. 1925 19 Nov. 1929 Completed Aug. 1925 Dec. 1930



RATANAKOSINORA

Royal Thai Navy, Official

COASTAL MINELAYERS

2 "Bangrachan" Class

BANGRACHAN (No. 1)

NHONG SARHAI (No. 2)

Displacement: Dimensions:

Guns: Mines: Machinery:

368 tons standard (408 tons full load)
160½×26×7½ feet
2—3 inch AA, 2—20 mm. AA.
142 capacity
Burmeister & Wain diesels. 2 shafts, B.H.P.: 540=12

Oil fuel:

kts. 18 tons 2,700 miles

Radius: Complement:

taunched by Cantiere dell'Adriatico, Monfalcone in 1936, No. 2 on 22 July. A photograph of Nhong Sarhal appears in the 1961-62 to 1965-66 editions.



Royal Thai Navy, Official

PATROL VESSELS

7 Trad Class

CHANDHABURI (No. 22) 16 Dec. 1936 CHUMPHONE (No. 31) 18 Jan. 1937 PATTANI (No. 13) 16 Oct. 1936

PUKET (No. 12) 28 Sep. 1935 RAYONG (No. 23) 11 Jan. 1937 SURASDRA (No. 21) 28 Nov. 1936 TRAD (No. 11) 26 Oct. 1935

Dimensions: Guns: Tubes: Machinery:

318 tons standard (470 tons full load)
219 (pp.), 223 (o.a.)×21×7 feet
3—3 inch AA., 1—40 mm. AA.; 2—20 mm.AA.
4—18 inch (2 twin)
Parsons geared turbines, 2 shafts. H.P.: 9,000=31 kts.

Boilers: Oil fuel: 2 Yarrow 102 tons 1.700 miles at 15 kts.

Radius:
Complement:

General

Designed as torpedo boats, Puket and Trad were laid down on 8 Feb. 1935 by Cantieri Riuniti dell'Adriatico, Monfalcone, for delivery by the end of 1935. Launch dates above. Armament was supplied by Vickers-Armstrongs Ltd, First boat reached 32-54 kts. on trials with 10,000 H.P. All delivered by summer of 1937. The 2 single 18 inch torpedo tubes and the 4—8 mm. guns were removed. Pennant numbers 5, 7, 3, 2, 6, 4 and 7, respectively. A photograph of Trad appears in the 1956-57 to 1964-65 editions, Chalburl and Sangkhia were sunk in action with a French squadron on 17 Jan. 1941.



CHANDHABURI

1965. Royal Thai Navy, Official

4 "Sattahib" Class

KANTANG (No. 7) KLONGYAI (No. 5) SATTAHIB (No. 8) TAKBAI (No. 6)

Displacement: Dimensions:

| TAKBAI (No. 3) SATIAHIB (No. 8) TAKBAI (No. 10 tons standard (135 tons full load) | 131\frac{1}{2}\frac{1}{2

Guns:
Tubes:
Machinery:
Boilers:
Oil fuel:
Radius: Complement:

General
Sattahlb was built by the Royal Thai Naval Dockyard, Bangkok, Iaid down on 21 Nov. 1956, launched on 28 Oct. 1957, and completed in 1958. The other three were built by Ishikawajima Co., Japan, all launched on 26 Mar. 1937 and completed on 21 June 1937. A photograph of Klongyal appears in the 1956-57 to 1964-65



SATTAHIB

1965, Royal Thai Navy, Official

DIULOM (ex-PC 1253) LONGLOM (ex-PC 570) PHALI (ex-PC 1185) SARASIN (ex-PC 495) SUKEIP (ex-PC 1218) THAYANCHON (ex-PC 5 TONGPLIU (ex-PC 616)

Displacement: Dimensions: Guns: A/S weapons:

280 tons standard (400 tons full load)
174 (o.a.)×23½×6 feet
1—3 inch AA., 1—40 mm. AA., 5—20 mm. AA.
2 ASW torpedo tubes (except Sarasin)
Diesel 2 shafts. B.H.P.: 3,600=19 kts.
60 tons
62 to 71, Sukeip 69 (10 officers, 59 men)
6,000 miles at 10 kts.

Machinery: Oil fuel: Radius:

General General
Former United States steel submarine chasers of the PC type, Launched in .1941-43
Used as patrol vessels. Pennant numbers PC 7, 8, 4, 1, 5, 2 and 6, respectively.
Khamronsin (ex-PC 609) was removed from the effective list in 1956. A photograph of Sukelp appears in the 1956-57 to 1964-65 editions.



LONGLOM

1965, Royal Thai Navy, Official

SURVEYING VESSEL

CHANTHARA

870 tons standard (996 tons full load)
229½ (o.a.)×34½×10 feet
1—20 mm. AA.
2 diesels, 2 shafts, B.H.P.: 1,000=13·25 kts.
10,000 miles (cruising)
69 Displacement: Dimensions:

Guns: Machinery: Boilers:

Complement:

General
Built by C Melchers & Co., Bremen, Germany. Laid down on 27 Sep. 1960.
Launched on 17 Dec. 1960. Can also be used as training ship and yacht.



CHANTHARA

1962, Royal Thai Navy, Official

COASTAL MINESWEEPERS

LADYA (ex-U.S.S MSC 297) 5 TADINDAENG (ex-U.S.S. MSC 301) 7 **BANGKEO** (ex-U.S.S. MSC 303) 6 **DONCHEDI** (ex-U.S.S. MSC 313) 8

Displacement: Dimensions:

330 tons standard (362 tons full load)
145\(\frac{1}{2}\) (o.a.)\(\times 27 \times 8\)\(\frac{1}{2}\) feet
2—20 mm. AA.
4 G.M. diesels. 2 shafts, B.H.P.: 1,000=13 kts.
43 (7 officers and 36 men) Guns: Machinery: Complement:

Comprement:

General

Built by Peterson Builders Inc., Sturgeon Bay, Wisc., (Ladya and Donchedi),
Tacoma Boat building Co. Tacoma, Wash. (Tadindaeng) and Dorchester Shipbuilding
Corp., Camden (Bangkeo). Ladya was transferred on 14 Dec. 1963, Bangkeo on
9 July 1965, Tadindaeng on 26 Aug. 1965, and Donchedi on 17 Sep. 1965 (last
three launched in 1964, 1 July, 11 Apr., 22 Dec.)

Of the ex-U.S. YMS type, Bangkeo (ex-YMS 334), Ladya (ex-YMS 138) and
Tadindaeng (ex-YMS 21) were removed from the effective list in 1964 and 1965.



LADYA

1964, Royal Thai Navy, Official

PATROL BOATS

SC 7 (ex-SC 31, ex-U.S. SC 1632)

SC 8 (ex-SC 32, ex-U.S, SC 1633)

Displacement: Dimensions: Guns: A/S weapons: Machinery:

110 tons light (125 tons full load) $111\times17\times6$ feet 1-40 mm., 3-20 mm. Depth Charges, Mousetrap High-speed diesel=18 kts.

General Former United States wooden submarine chasers of the SC type. Built by South Coast Co., Newport Reach, California, in 1954-55. Transferred by the U.S.A. Sister ship SC 33 (ex-SC 1634) was officially scrapped on 8 March 1962.



SC 8

Royal Thai Navy, Official

GUNBOAT

T 11 (ex-U.S. PMG 71)

130 tons standard (147 tons full load)
99 (w.l.), 101 (o.a.)×21×6 feet
1—40 mm. AA.; 4—20 mm. AA.; 2—50 cal.
Diesels. 2 shafts. B.H.P.: 1,800=18.5 kts. Displacement: Dimensions Guns: Machinery:

General

Built by Peterson Builders Inc. Launched on 5 May 1965. Transferred to the Royal Thai Navy on 1 Feb. 1966.

COASTGUARD VESSELS

CGC 3 (ex-CGC 13) CGC 4 (ex-CGC 14) CGC 5 (ex-CGC 15) CGC 6 (ex-CGC 16)

Displacement: Dimensions: Guns: A/S weapons: Machinery: 95 tons

95 tons 95×20½×5 feet 1—20 mm. AA. 2 D.C. racks, 2 mousetraps 4 diesels, 2 shafts. B.H.P.: 2,200=21 kts. 1,500 miles cruising range

Boilers: Complement:

General
U.S. coastguard cutters transferred from the United States to Thailand in 1954, Similar to the cutters built for U.S.C.G. by the U.S. Coast Guard, Curtis Bay, Maryland in 1953. Cost £475,000 each.



CGC 4

Royal Thai Navy, Official

CGC 1 (ex-CGC 11)

CGC 2 (ex-CGC 12)

Displacement: Dimensions: Guns:

A/S weapons: Machinery:

44.5 tons 83 ½~×16×4½ feet 1—20 mm. AA. 2 D.C. racks, 2 mousetraps 2 Viking petrol engines. B.H.P.: 1,300=20.5 kts.

Former U.S. Coast Guard cutters of the YP class. Of wooden hulled construction.



CGC 2

1959, Royal Thai Navy, Official

TRAINING SHIP (Ex-Fleet Minesweeper)

CHOW PRAYA (ex-H.M.S. Havant)

Displacement: Dimensions:

Guns: Machinery:

680 tons standard (840 tons full load) $220\times28\frac{1}{2}\times7\frac{1}{2}$ feet 2...57 mm. AA., 1...40 mm. AA. Triple expansion. 2 shafts. I.H.P.: 2,200=16 kts. Yarrow, converted to burn oil 160 tons 1,750 miles at 15 kts.

Boilers: Oil fuel: Radius: Complement:

Former British fleet minesweeper of the "Racecourse" class. Built by Eltringhams, South Shields. Launched in Nov. 1918. Purchased in 1923 and reconstructed by John I. Thornycroft & Co. Ltd., Southampton. Guns are interchangeable for training.



CHOW PRAYA

Royal Thai Navy, Official

LANDING SHIPS

3 Ex-U.S. LSM Type

ANGTHONG LST 1

CHANG (ex-U.S.S. Lincoln County, LST 898) LST 2 PANGAN (ex-U.S.S Stark County, LST 1134) LST 3

Displacement: Dimensions: Guns: Machinery:

1.625 tons standard (4.080 tons full load)
316 (w.l.), 328 (o.a.)×50×14 feet
6—40 mm., 4—20 mm.
G.M. diesels. 2 shafts, B.H.P.: 1,700=11 kts.

Complement: General

Angthong is employed as a transport. Chang, transferred to Thailand in 1962, was built by Dravo Corp., laid down on 15 Oct. 1944, launched on 25 Nov. 1944 and completed on 29 Dec. 1944. Pangan was transferred on 16 May 1966. A photograph of Angthong appears in the 1956-57 to 1964-65 editions.



CHANG

1965, Royal Thai Navy, Official

3 Ex-U.S. LST Type

GUT (ex-LSM) LSM 5 PAI (ex-LSM) LSM 2 KRAM (ex-U.S.S. LSM 469) LSM 3

Displacement: Displacement.
Dimensions:
Guns:
Machinery:
Complement:

743 tons standard (1,095 tons full load) 196½ (w.l.), 203½ (o.a.)×34½×8½ feet 2—40 mm. AA.
Diesel direct drive. 2 shafts. B.H.P.: 2,800=12·5 kts.

General

General
Former United States landing ship of the LCM, later LSM (Medium Landing Ship), type. Kram was transferred to Thailand under MAP at Seattle, Wash. on 25 May 1962; she was built by Brown Shipbuilding Co., Houston, Tex., laid down on 27 Jan. 1945, launched on 17 Feb. 1945, and completed on 17 Mar. 1945. A photograph of Gut appears in the 1956-57 to 1964-65 editions.



KRAM

1965, Royal Thai Navy, Official

LANDING CRAFT

2 Ex-U.S. LCI Type

PRAB (ex-LCI) LCI I

Displacement:

SATAKUT (ex-LCI) LCI 2 230 tons standard (387 tons full load) 157×23×6 feet 2—20 mm. AA. Diesel. 2 shafts. B.H.P.: 1,320=14 kts. 54

Dimensions: Guns: Machinery: Complement:

General
Former United States landing craft of the LCI (Infantry Landing Craft) type. A photograph of Prob appears in the 1957-58 and earlier editions.



SATAKUT

Royal Thai Navy, Official

6 LCU Ex-U.S. LCT (6) Type

ARDANG (LCU 10) KOLUM (LCU 12) Displacement: Dimensions:

Guns: Machinery: Complement:

MATAPHON (LCU 8) RAWI (LCU 9)
PHETRA (LCU 11) TALIBONG (LCU 13)
134 tons standard (279 toms full load)
112×32×4 feet
2—20 mm. AA.
Diesel. 3 shafts. B.H.P.: 675=10 kts.

Former United States landing craft of the LCT(6) type. Employed as transport ferries. A photograph of Mataphon appears in the 1950-51 to 1961-62 editions.

TRANSPORTS

SICHANG AKL 1

Displacement:

815 tons standard 160×28×16 feet Diesel, 2 shafts. B.H.P.: 550=16 kts. 30 Machinery: Complement:

Built by Harima Co., Japan, Sichang was launched on 10 Nov. 1937, Completed in Jan, 1938, A photograph of this ship appears in the 1953-54 to 1959-60 editions. Sister ship Pangan was deleted from the list in 1962.

KLED KEO A 7

Reefer ship reported to be operating as a naval auxiliary and transport.

OILERS

SAMED

Displacement: Dimensions:

305 tons standard (485 tons full load) $108\times20\times10$ feet Diesel. B.H.P.: 500=11 kts.

Built by Royal Thai Naval Dockyard, Bangkok. Launched on 8 July 1966.

CHULA AO 2 Displacement: Dimensions: Machinery: 2,395 tons standard $328\times43\frac{1}{2}\times25$ feet Steam turbine

General
This tanker and Matra (see below) were acquired for naval oiling and supply duties.

MATRA AO 3 Displacement: Dimensions: Machinery:

Machinery:

4,744 tons 328×45½×20 feet Steam turbine

Employed as a freighting and fleet replenishment tanker and naval supply ship.

SAMUL YO 4

Displacement: Dimensions: Machinery: Complement:

422 tons standard 174½×32×15 feet Diesel. 2 shafts. B.H.P.: 600=8 kts.

Small tanker of the ex-YOG type. Employed as a fleet auxiliary attendant oiler.



SAMUL

Royal Thai Navy, Official

Displacement: Dimensions: Machinery:

150 tons standard 95×18×7½ feet Diesel. B.H.P.: 150=10 kts

General

Launched in 1938. Employed as a small naval auxiliary servicing tanker.

WATER CARRIERS

CHUANG

Displacement:

305 tons standard (485 tons full load) 98×18×7½ feet (official figures) G.M. diesel. B.H.P.: 500=11 kts.

Complement:

Built by the Royal Thai Naval Dockyard, Bangkok. Launched on 14 Jan. 1965.

CHAN YW 6

Displacement: Dimensions: Machinery:

355 tons standard Diesel. Speed=6 kts.

General

A photograph of this ship appears in the 1956-57 to 1959-60 editions.

SAMAESAN (ex-Empire Vincent)
Displacement: 503 tons (full load)
Dimensions: 105×261×13 feet
Machinery: Triple expansion, I.H.P. 850=10·5 kts.
Complement: 27

General Built by Cochrane & Sons Ltd., Selby, Yorks., England. A photograph appears in the 1957-58 and earlier editions. Pennant No. YTB 7.

RANG KWIEN

Displacement: Dimensions: Machinery:

586 tons standard $162\frac{1}{3}\times31\frac{1}{6}\times13$ feet Triple expansion steam engine. Speed=10 kts.

General
This ship is not employed as a tug but as a mine countermeasures support ship (MCS). Pennant No. MCS 11.
Minor Tugs
KLUENG BADAN and MARN VICHAI. Displacement: 63 tons standard; Dimensions: 64\\16\\xi 6 feet; Machinery: Diesel. Speed=8 kts.

64 $\frac{1}{1} \times 16^{\frac{1}{2}} \times 6$ feet; Machinery: Diesel. Speed=8 kts. RAD. Displacement: 52 tons standard; Dimensions: $60\frac{1}{2} \times 17\frac{1}{2} \times 5$ feet; Machinery; Diesel. Speed=6 kts.

TOGO

It is reported that Togo, which proclaimed independence on 27 April 1960, has acquired 3 steel 100 ft. motor patrol boats and 1 steel 95 ft. river gunboat and may have in the near future 1 steel 130 ft. patrol vessel.

TRINIDAD & TOBAGO

PATROL CRAFT

2 Vosper Type

COURLAND BAY

TRINITY

Displacement: Dimensions:

96 tons standard (109 tons full load) 103 (o.a.) \times 19 $\frac{1}{2}\times$ 5 $\frac{1}{2}$ feet 1—40 mm. Bofors Guns

2 intercooled 12-cyl. Vee-form Paxman Ventura YJCM turbocharged diesels. B.H.P.: 2,800=25 kts. (max.) Machinery: Oil fuel:

tons 1,800 miles at 15 kts. 23 (3 officers, 20 ratings) Radius: Complement:

General
Designed and built by Vosper Limited, Portsmouth. Of steel construction with aluminium alloy superstructure, Generally similar to the ten patrol craft designed and built by Vosper for the Royal Malaysian Navy, and the three for the Kenya Navy, Up-to-date radar and navigation equipment is fitted, and the boats are airconditioned throughout except for the engine room. Vosper roll-damping equipment is fitted for improved sea-keeping and greater efficiency and comfort of the crews. Trinity was launched on 14 Apr. 1964. Both were commissioned at Portsmouth on 20 Feb. 1965. Trinity is named after Trinity Hills, so named by Colombus on making his landfall in 1498, and Courland Bay after a bay in Tobago where a settlement was fourded by the Duke of Courland in the 17th century.

(Trinidad & Tobago Coast Guard:—125 personnel, Three 40 ft, and one 60 ft, patrol craft, all 18 kts.) General

patrol craft, all 18 kts.)



TRINITY

1965, courtesy Vosper Ltd., Builders

TUNISIA

CORVETTE (Aviso)

DUSTUR (ex-Chevreuil, F 735) E 17

Displacement:

647 tons standard (920 tons full load) 257×28½×10½ feet 1.—4·1 inch, 1.—40 mm., 6—20 mm. 4 D.C.T., 2 D.C. racks Sulzer diesels. 2 shafts. B.H.P.: 4,000=20 kts. 100 tons 10,000 miles at 9 kts. 5,200 miles at 15 kts. 100 (8 officers, 92 men) Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Oil fuel:
Radius:
Complement:

Built at Lorient Dockyard, Laid down in Apr. 1937, launched on 17 June 1939 and completed in Oct. 1939. Transferred from the French Navy on 13 Oct. 1959 and renamed. Sister ship of El Lahiq (ex-Chamois) in the Moroccan Navy.



DUSTUR

1964, A. & J. Pavia

PATROL CRAFT (Vedette de Port)

ISTIQLAL (ex-VC 11, P Displacement: Dimensions:

Complement:

Guns: Machinery: Radius:

761) 75 tons standard (82 tons full load) $104\frac{1}{1} \times 15\frac{1}{2} \times 5\frac{1}{2}$ feet 2—20 mm, AA. 2 Mercedes-Benz diesels, 2 shafts. B.H.: 2,700= 28 kts. 1,500 miles at 15 kts. 15

Seaward defence motor launch of the VC type. Completed in 1958. Built by Lurssens in Germany. Transferred from the French Navy on 22 Sep. 1959.



ISTIQLAL

Ex-VC 11

Administration

Commander-in-Chief, Turkish Naval Forces: Oramiral (Senior Admiral) Necdet Uran

Chief of Staff, Turkish Naval Forces: Tümamiral (Vice-Admiral) Turgut Özel

TURKEY

Commander of the Turkish Fleet: Koramiral (Admiral) Bahattin Özülker

Naval Attaché in London: Captain F. Basol.

Naval Attaché in Washington: Captain Erdogan Yazici

Personnel

1966: 2,200 officers and 35,000 ratings

Mercantile Marine

Lloyd's Register of Shipping: 287 vessels of 671,681 tons gross

Launched

1944

1945 1944 1944

1943

25 lune

June Aug. Oct. May Jan May 6 27 7 17

Nov. 26 18 Sep. June

Silhouettes

Scale: 150 ft.=1 inch.







GAZIANTEP, GEMLIK

ALP ARSLAN Class



NUSRET

Builders
Electric Boat Co.
Electric Boat Co.

Manitowoc 5.B. Co Electric Boat Co. Manitowoc S.B. Co Electric Boat Co. Manitowoc S.B. Co Electric Boat Co.

Electric Boat Co, Manitowoc S.B. Co Manitowoc S.B. Co Electric Boat Co, Electric Boat Co,

SUBMARINES

No.

21

20

17

22

Nato

Nato No. \$ 330 \$ 341 \$ 344 \$ 331 \$ 343 \$ 343 \$ 340 \$ 330

342



ALANYA Class

Completed 26 Oct. 19-9 Dec. 19-1 Mar. 194

28 Apr 17 Aug. 23 Sep.

30 Apr. 16 Jan. 21 Oct.

BIRINCI INÖNÜ (ex-U.S.S. Brill, SS 330) CANAKKALE (ex-U.S.S. Bumper, SS 333) CERBE (ex-U.S.S. Hammerhead, SS 364) GUR (ex-U.S.S. Chub, ex-Bonat, SS 329) HIZIR REIS (ex-U.S.S. Mero SS 378) IKINCI INÖNÜ (ex-U.S.S. Blueback, SS 326) PIRI REIS (ex-U.S.S. Mapiro, SS 376) PREVEZE (ex-U.S.S. Guitarro, SS 363) SAKARYA (ex-U.S.S. Boarfish, SS 327) TURGUT REIS (ex-U.S.S. Boarfish, SS 320)

10 "Gur" Class

Displacement:

Dimensions: Guns:

Tubes:

Machinery:

1,526 tons standard, 1,829 tons surface (2,424 tons submerged) 311½×27½×13½ feet 1—5 inch, 25 cal. (removed from most boats) 10—21 inch (6 bow, 4 stern), 24 torpedos carried. G.M. 2-stroke diesels. B.H.P.: 6,500-20 kts, surface Electric motors. S.H.P.: 2,750=10 kts submerged 300 tons

Oil fuel:

300 300 tons 12,000 miles at 10 kts Radius: Complement:





PIRI REIS

1966, Turkish Navy, Official



IKINCI INÖNÜ

1966, A. & J. Pavia



HIZIR REIS

1964, Turkish Navy, Official

Former U.S. submarines of the "Balao" type acquired by Turkey in 1948-60. All built by, the Electric Boat Company. Groton, Connecticut, except Cerbe, Hizir Reis, Piri Reis and Preveze, by Manitowoc Shipbuilding Co, Of all-welded construction. High standard of accompartments. Canakkale, officially transferred in 1950, was semi-streamlined before delivery. Dumlupinar (ex-Blower) was lost in the Dardanelles on 4 Apr. 1953. Preveze semi-streamlined and Cerbe, fully streamlined, were transferred on 7 Aug. 1954 and Oct. 1954 respectively. Cerbe and Preveze are "guppy snorkel" conversions. Their loan was extended for five years in 1959 Sakarya was overhauled by the Electric Boat Division of the General Dynamics Corporation (formerly known as the Electric Boat Company). Groton, in 1957. Turgut Reis was transferred in Oct, 1958 and Hizar Reis and Piri Reis on 20 Apr. 1960 and 18 Mar 1960 at San Francisco Naval Shipyard.

Photographs

A photograph of Preveze appears in the 1959-60 to 1961-62 editions, of Gür in the 1958-59 to 1961-62 editions, of Birinci Inonu in the 1953-54 to 1961-62 editions, of Canakkale in the 1962-63 and 1963-64 editions, of Piri Reis in the 1962-63 to 1965-66 editions, and of Turgut Reis in the 1959-60 to 1965-66 editions editions.

Disposals of older Submarines Burak Reis, Murat Reis and Oruc Reis, of the "Burak Reis" class, and Saldiray and Yildiray of the "Saldiray" class, were discarded in 1957.

DESTROYERS

ALP ARSLAN (ex-H.M.S. Milne)
KILIC ALI PASA (ex-H.M.S. Matchless)
MARESAL FEVZI ÇAKMAK (ex-H.M.S. Marne)
PIYALE PASA (ex-H.M.S. Meteor)

Pennant No. D 348 D 350 Builders Scotts' Shipbuilding & Engineering Co. Ltd., Greenock, Alex, Stephen & Sons Ltd., Govan, Glasgow. Vickers Armstrongs, Ltd., Newcastle-on-Tyne Alex, Stephen & Sons Ltd., Govan, Glasgow 349 351

Laid down 24 Jan. 1940 14 Sep. 1940 23 Oct. 1940 14 Sep. 1940 Completed 30 Dec. 4 Sep. 30 Oct. 6 Aug. 26 Feb. 2 Dec. 1941 1941 1942

Ex-British "Milne" Type

4 "Alp Arslan" Class

2,015 tons standard (2,840 tons Displacement: Dimensions:

full load) 354 (pp.), $362\frac{1}{2}$ (o.a.) $\times 36\frac{1}{4} \times 16\frac{1}{4}$ feet 6—47 inch, 6—40 mm. AA.

Tubes:

A/S weapons:

16½ feet
6—4.7 inch, 6—40 mm. AA.
(1 twin, 4 single) 2—3 pdr.
4—21 inch
1 Squid triple-barrelled depth
charge mortar
Parsons geared turbines. 2 shafts.
S.H.P.: 48,000=36 kts.
2 Admiralty 3-drum type
500 tons
1,700 miles at 20 kts.
240 Machinery: Boilers: Oil fuel:

Radius Complement: 240

General

Guns:

General
Former "Milne" class, one of the most successful and handsome types which ever served in the Royal Navy. The first British destroyers with three power worked turrets. Transferred to Turkey under an agreement signed in Ankara on 16 Aug. 1957. Nominally handed over to the Turkish Navy at Portsmouth on 29 June 1959 after refit in British shipyards, where the after tubes and secondary armament were removed and replaced by deckhouse, Squid and 40 mm. guns. Renamed after famous generals and 16-18th century admirals



MARESAL FEVZI CAKMAK

1966, A. & J Pavia

Photographs

NATO

D

A photograph of Alp Arslan appears in the 1959-60 to 1961-62 editions and of Killic All Pasa in the 1962-63 to 1965-66 editions
Disposal of Older Destroyers

Gayret was officially deleted from the list in 1965.

Demishiar, Muavenet and Sultanhisar were discarded in 1960, and Tinaztepe and Zafer in 1957.

Demission, movement and Surdination were assessed in 1960, and Tinoztepe and Zafer in 1957.

Battle Cruiser
The very old Turkish (former German) battle cruiser
Yavuz (ex-Goeben) was decommissioned in 1960, and was offered for sale in Sep. 1965



PIYALE PASA

Displacement:

1966, Turkish Navy, Official

4 "Gelibolu" Class

1,700 tons standard (2,800 tons full load) 341 (w.l.), 348½ (o.a.)×36× 18 feet Dimensions: 18 feet Gelibolu, Giresun: 3—5 inch, 38 cal., 4—3 inch AA. Gaziantep, Gemlik: 4—5 inch, 38 cal., 4—40 mm, AA. 5—21 inch Guns: Tubes: A/S weapons: Hedgehogs, homing torpedoes, 4 D.C.T.
G.E. geared turbines 2 shafts.
S.H.P.: 50,000=37 kts.
4 Babcock & Wilcox
600 tons
5,000 miles at 15 kts.
250 Machinery: Boilers: Oil fuel: Radius;

1,700 tons standard (2,800 tons

Complement: General

Former United States destroyers of the "Gleaves" class acquired by Turkey early in 1949.

Transfer

Gelibolu and Giresun were formally taken over on 29 Apr. 1949, and Gaziantep and Gemilk in 1950.

Modernisation

Modernised in the United States in 1957-58 and fitted with tripod foremast and raised bridge.

Gunnery
The 5 inch gun in "X" position, 40 mm, AA, guns and 20 mm, AA, guns in Gelibolu and Giresun were replaced by four 3-inch AA, guns in two twin moun-

Photographs

A photograph of Gelibolu with pole foremast appears in the 1954-55 to 1957-58 editions, and of Gemlik in the 1956-57 to 1958-59 editions





GIRESUN

GEMLIK

1966, Turkish Navy, Official



1964, Turkish Navy, Official

I New Construction

NUSRET

Displacement:

1,880 tons standard
246 (pp.), 2523 (o.a.)×41×11
feet
4—3 inch dual purpose (2 twin mountings)
400 capacity
G.M. diesels. 2 shafts.
B.H.P.: 4,800=18 kts.
130 Dimensions:

Machinery:

Complement: 130

General

General

A new type of minelayer of special ScandinavianNATO design. Built at Frederikshaven Dockyard, Denmark. Laid down in 1962, launched in 1964, and completed in 1965. Commissioned on 16 Sep. 1964 at
Copenhagen. Pennant No. N 108.



NUSRET

1965, Turkish Navy, Official

ESCORT MINESWEEPERS

MINELAYER

Ex-U.S. "Auk" Type

6 "Candarli" Class

CANDARLI (ex-Frolic, 22 July 1943)
CARDAK (ex-Tourmaline, ex-Usage, 4 Oct. 1942) A 596
CARSAMBA (ex-Tattoo, 27 Jan. 1943)
CESME (ex-Elfreda, 25 Jan. 1943)
EDINCIK (ex-Grecian, 1943)
EREGLI (ex-Pique, ex-Celerity, 26 Oct. 1942) A 592

1,010 tons standard (1,250 tons Displacement:

1,010 tons standard (1,230 tons full load)
215 (w.l.), 221 (o.a.)×32×
10½ feet
1—3 inch, 6—40 mm.
4 D.C.T.
Diesel, electric drive. 2 shafts.
B.H.P.: 3,500=18 kts. Dimensions:

Guns: A/S weapons:

Machinery:

Complement: 105

General

General
Former U.S. steel hulled fleet minesweepers of the
"Auk" type. Transferred to Great Britain while under
construction. Served in the Royal Navy. Retransferred
to Turkey in Apr. 1947. Built by Associated Shipbuilders, Cleveland (Carsamba, Cesme and Edincik);
General Engineering & D.D. Co., Alameda (Candarli)
and Gulf Shipbuilding Corporation, Houston (Cardak



EREGLI

1964, Turkish Navy Official

and Eregli). Launch dates above, Named after Turkish ports. Erdemli (ex-Catherine) was withdrawn from active service in 1963, and Edremlt (ex-Chance) in 1965.

Cesme and Cardak are Headquarter Ships. Eregil is Logistic Support Ship, Edincik and Erdemli are Training Ships. Carsamba and Candarli are Survey Ships.

Ex-British "Bathurst" Type

3 "Alanya" Class

790 tons standard (1,025 tons full load) 162 (pp.), 186 (o.a.) \times 31 \times 8½ Displacement:

Dimensions:

feet 1—4 inch, 1—40 mm., 4—20 mm. Guns: A/S weapons: Machinery: 2 D.C.T. Triple expansion, 2 shafts, I.H.P.: 1,800-15.5 kts.

Oil fuel: 170 tons

4,500 miles at 10 kts. Radius:

Complement:

General

General
All Australian built, 1940-42. Served in the Royal
Navy. Acquired from Great Britain in Aug. 1946.
Named after Turkish ports
All are now Logistic Support Ships. Hamit Naci (exAyancik, ex-Launceston) was withdrawn from service
in 1965, and Ayvalik (ex-Gawler) in 1963. A photograph of Alanya appears in the 1951-52 to 1963-64
editions. editions

ALANYA (ex-Broome) (ex-Pirie) AMASRA AYVALIK (ex-Antalya), ex-Geraldton) No. M 501 M 502 502 500 Builders Evans Deakin, Brisbane Broken Hill, Whyalla Poole & Steele, Sydney

Launched Oct. 1941 6 Oct. 1941 Dec. 1941 16 Aug.



AMASRA

1964. Turkish Navv. Official

TRAINING SHIP

SAVARONA

Displacement:

5,710 tons 349½ (w.l.), 408½ (o.a.)×53× 20½ (mean) feet 4—3 inch, 2—40 mm. AA., 2—20 mm. AA.

Guns:

Machinery:

2—20 mm. AA.
6 geared turbines. 2 shafts.
S.H.P.: 10,750=21 kts. (about 18 kts. now)
4 watertube, 400 lb. working Boilers:

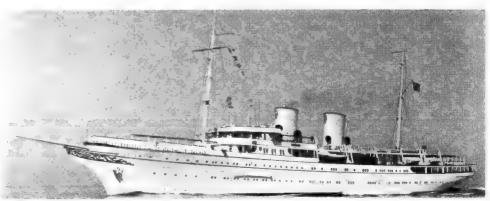
Oil fuel:

pressure 2,100 tons 9,000 miles at 15 kts. 132+81 midshipmen Radius: Complement:

General

General

Built by Blohm & Voss, Hamburg. Launched on 28
Feb. 1931 Formerly probably the most sumptuously
fitted yacht afloat. Equipment includes Sperry gyrostabilisers. Reconstructed and converted into a training
ship in 1952, the saloons and dining rooms being
adapted as classrooms, workshops and libraries for 120 midshipmen.



SAVARONA

1965, Turkish Navy, Official

Launched 30 Sep. 1 20 Dec. 1

18 Apr. 14 May 15 Nov.

30 Dec.

14 Mar. 29 May 21 Jan.

1941

1942

COASTAL ESCORTS (ex-Fleet Minesweepers)

BAFRA (ex-H.M.C.S. Nipigon, FSE 188)
BANDIRMA (ex-H.M.C.S. Kenora, FSE 191)
BARTIN (ex-H.M.C.S. Kentville, FSE 182)
BEYKOZ (ex-H.M.C.S. Blairmore, FSE 193)
BEYLERBEYI (ex-H.M.C.S. Mahone, FSE 192)
BODRUM (ex-H.M.C.S. Fort William, FSE 195)
BORNOYA (ex-H.M.C.S. Westmount, FSE 187)
BOZCAADA (ex-H.M.C.S. Swift Current, FSE 185)
BUYUKDERE (ex-H.M.C.S. Sarnia, FSE 190)

Ex-Canadian "Bangor" Type

9 "Bafra" Class

672 tons standard (900 tons full)
171½ (pp.), 180 (o.a.)× 28½ ×
12½ (max.) feet
1—40 mm., 2—20 mm.
1 Hedgehog, 4 D.C.T.
Triple expansion, 2 shafts. I_H.P.:
2,400=16.5 kts.
2 Admiralty 3-drum type
70 Guns: A/S weapons: Machinery:

Boilers:

Complement:

Displacement: Dimensions:



BANDIRMA 1966, Turkish Navy, Official

General
Former Canadian fleet minesweepers, rerated coastal escorts in 1953. Transferred to Turkey in 1957. Bafra, Bandirma, Bartin and Bodrum were turned over 25 Nov. 1957 at Point Edward Naval Base, Sydney, N.S., and Beykoz, Beylerbeyl, Barnova, Bozcaada and Buyukdere early 1958. All sailed from Canada to Turkey on 19 May 1958. Biga (ex-H.M.C.S. Medicine Hat, FSE 197) was withdrawn from service in 1963.

COASTAL MINESWEEPERS

 SAMSUN M 257 (ex-U.S.S. MSC 268)
 SIGACIK M 265 (ex-U.S.S. MSC 311)

 SAROS M 264 (ex-U.S.S. MSC 304)
 SILIFKE M 263 (ex-U.S.S. MSC 304)

 SAROS M 264 (ex-U.S.S. MSC 305)
 SEDDULBAHIR M 260 (ex-MSC 272)

 SURMENE M 259 (ex-U.S.S. MSC 271)

320 tons standard (370 tons full load)
138 (pp.), 144 (o.α.)×28×9 feet
2—20 mm. AA,
2 diesels 2 shafts. B.H.P.: 1,200=14 kts. Displacement: Dimensions:

Guns: Machinery:

Oil fuel: Radius: 25 tons 2,500 miles at 10 kts. 38 (4 officers, 34 men)

Complement:

General

General

Constructed of wood and non-magnetic materials. Transferred on 30 Sep. 1958, 26 July 1965, 8 Nov. 1965, 9 July 1959, 29 May 1965, 25 Oct. 1965, 30 Jan. 1959 and 27 Mar. 1959 respe, ctively, under MAP.



SEDDÜLBIHAR

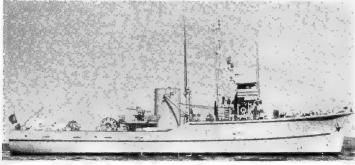
1966, Turkish Navy, Official

TIREBOLU M 524 (ex-H.M.C.S. Comax) TERME M 523 (ex-H.M.C.S. Trinity)
TEKIRDAG M 525 (ex-H.M.C.S. Ungava) TRABZON M 522 (ex-H.M.C.S. Gaspe)

Displacement: Dimensions: Guns: Machinery: Oil fuel: Radius: Complement:

390 tons standard (412 tons full load) 140 (pp.), 152 (o.a.)×28×7 feet 1—40 mm.
Dissels. 2 shafts. B.H.P.: 2,400=16 kts. 52 tons 4,500 miles at 11 kts, 40

General Ex-Canadian MCB. Sailed from Sydney, N.S., to Turkey on 19 May 1958.



TERME

1959, Turkish Navy Official

Of the coastal minesweepers of the "K" Class, former U.S. YMS type, Kas (ex-YMS 79) and KIIImII (ex-YMS 289) were withdrawn from service in 1963, Kozlu (ex-YMS 375) and Kusadasi (ex-YMS 468) in 1965, and Karamursel (ex-Kulluck, ex-YMS 348), Kemer (ex-YMS 228), Kerempe ex-YMS 239) and Kirte (ex-YMS 307) in 1966.

COASTAL MINELAYERS

No. 121

129

130

122

125 126 127

128

MARMARIS (ex-LSM 481) MERIC (ex-LSM 490) MERSIN (ex-LSM 492) MORDOGAN (ex-LSM 494) MUREFTE (ex-LSM 493)

Displacement:
Dimensions:
Guns:
Machinery:
Oil fuel:
Radius:
Complement: 743 tons standard (1,100 tons full load) 1961 (w.l.), 203½ (o.a.)×344×8½ feet 2—40 mm. AA., 2—20 mm. AA. Diesels. 2 shafts. B.H.P.: 2,880=12 kts. 60 tons 2,500 miles at 10 kts. 70

General
Ex-U.S. Landing Ships Medium. All launched in 1945, converted into coastal minelayers by the U.S. Navy in 1952 and taken over by the Turkish Navy (LSM 481, 484 and 490) and the Norwegian Navy (LSM 492 and 493) in Oct. 1952 under MAP. LSM 492 (Vale) and LSM 493 (Vidar) were retransferred to the Turkish Navy on 1 Nov. 1960 at Bergen, Norway. Nato Pennant Nos. N 100 (Marmaris), N 101 (Mardogan), N 102 (Meric). N 103 (Mersin), N 104 (Mürefte).



MARMARIS

1966, Turkish Navy, Official

MEHMEDCIK (ex-U.S.S. YMP 3) N 105

Displacement: Dimensions: Machinery: Complement:

540 tons full load 130×35×6 feet Diesels. 2 shafts, B.H.P.: 600=10 kts. 22

General

Former U.S. motor mine planter. Built by Higgins Inc., New Orleans, Completed in 1958. Steel hulled. Transferred under MAP in 1958. For harbour defence,



MEHMEDCIK

1965, Turkish Navy, Official

PATROL VESSELS

6 New Construction

AKHISAR P 114 (ex-PC 1641) DEMIRHISAR P 112 (ex-PC 1639) KOCHISAR P 116 (ex-PC 1642) SIVRIHISAR P 115 (ex-PC 1643) SULTANHISAR P 111 (ex-PC 1638) YARHISAR P 113 (ex-PC 1640)

280 tons standard (412 tons full load)
170 (w.l.), 173\frac{2}{3} (o.a.)\gamma23\square\text{10}{2} feet
1—3 inch d.p.; 1—40 mm. AA.
4 D.C.T.
2 F.M. diesels. 2 shafts, B.H.P.: 2,800=19 kts.
65 (5 officers and 60 men) Displacement: Dimensions:

Guns:
A/S weapons:
Machinery:
Complement:

All are similar to U.S. 173 ft, class submarine chasers. Built by Gunderson Bros. Engineering Co., Portland, Oregon, except Kochisar built in Gölcük Dockyard, Turkey. Transferred on 3 Dec. 1964, 22 Apr. 1965, 22 Apr. 1965, 2 May 1964, 24 Sep. 1964 and 22 Apr. 1965, respectively.



SULTANHISAR

1966, Turkish Navy, Official

	IIV4	OT	OR.	TO	RPE	00	В	UA	15	
ATMAG BOGA		DENIZ (ARTA	KUSU L		KASIR(SAH: SIMS		TAYFUN YILDIRIM
	Displacemen	t:	160	tons	standard	(180	tons	full	load)	

140½×23½×7½ feet 2—40 mm. AA. 4—21 inch Dimensions: Guns: Tubes

4 Maybach diesels, 4 shafts. B.H.P.; 12.000=12 kts. Machinery:

General Of the German "Jaguar" type. Being built by Lürssen, Vegesack.

DOGAN MARTI

Transfer Hugin and Munin are on loan under a German-Turkish war reparations plan from West Germany (see page 108) and renamed as above.



DOGAN

Boatservice Ltd., A/S

REPAIR SHIPS

RL 19, ex- **ONARAN** (ex-Alecto, AGP 14, ex-LST 455) 558) BASARAN (ex-Patrocius, ARL

1,625 tons standard (3,960 tons full load)
316 (w.f.), 328 (o.a.)×50×11 feet
2—40 mm. AA:, 8—20 mm. AA.
Diesel. 2 shafts. B.H.P.: 1,700=11 kts,
1,000 tons
6,000 miles at 9 kts. Displacement: Displacemen Dimensions: Guns: Machinery: Oil fuel: Radius:

General
Former U.S. repair ship and MTB tender, respectively, of the LST type. Basaran
was launched on 22 Oct. 1944 by Bethlehem Hingham Shipyard, Onaran on 14 Apr.
1944 by Missouri Valley Bridge & Iron Co. Acquired from the U.S.A. in 1952 and
1947, respectively. Photograph of Onaran in the 1953-54 to 1960-61 editions.



BASARAN

1965, Turkish Navy, Official

MOTOR LAUNCHES

9 "J" Class

J 15 1 12 J 16 J 13] 14] 17 1 18 1 19 1 20

Displacement Dimensions:

70 tons $95{\times}15\frac{1}{2}{\times}4\frac{1}{4} \text{ feet}$ 4 M.B. diesels. 2 shafts. B.H.P.: 2,700=29 kts. Machinery:

General

Cutters of U.S.C.G. type built in 1960-61 by Schweers, Bardenfleth. A photograph of J 12 appears in the 1962-63 to 1965-66 editions.



J 19

1966, Turkish Navy, Official

8 "AB" Class

AB 1 (ex-ML 386) P 321 AB 4 (ex-ML 837) P 324 AB 7 (ex-ML 862) P 327 AB 2 (ex-ML 584) P 322 AB 5 (ex-ML 838) P 325 AB 8 (ex-ML 863) P 328 AB 3 (ex-ML 836) P 323 AB 6 (ex-ML 842) P 326

85 tons standard (115 tons full load)
112×17½×4 feet
1-3 pdr., 2-20 mm. AA., 4 M.G.
2 Hall-Scott engines. B.H.P.: 1,120=21 kts. Displacement: Displacement:
Dimensions:
Guns:
Machinery:
Oil fuel:
Complement: 12 18 tons

General

Fairmile B type. Launched in 1940-42. Transferred in 1947. Pennant numbers (NATO) above. A photograph of AB 2 appears in the 1947-48 to 1960-61 editions, and of AB 7 in the 1961-62 to 1965-66 editions.



AB 6

1966, Turkish Navy, Official

4 "LS" Class

LS 9 P 339 LS 11 P 309 LS 12 P 310

LS 10 P 308 LS 11 P 63 tons 83×14×5 feet 1—20 mm. AA. 2 Cummins. B.H.P.: 1,100 Displacement: Dimensions: Guns: Machinery:

Ex-U.S. type, transferred on 25 June 1953. P pennant numbers (NATO) above.



LS 12

1961, Giorgio Arra

9 "MTB" Class

MTB 6 P 316 MTB 7 P 317 MTB 8 MTB 9 MTB 10 MTB 1 P 311 MBT 2 P 312

Displacement: Dimensions: Machinery: 70 tons 71½×13½×8½ (max.) feet Diesel. B.H.P.: 2,000=10 kts.

General All launched in 1942. General purpose craft. P pennant numbers (NATO) above. Photograph of MTB 9 in the 1957-58 edition. MTB 5 (P 315) was scrapped.

SUBMARINE RESCUE SHIP

KURTARAN (ex-Bluebird, ASR 19, ex-Yurak)

1.294 tons standard (1.675 tons full load) 205 (o.a.)×384×12 feet 1—3 inch, 2—40 mm. AA. Diesel-electric. B.H.P.: 3,000=16 kts. Displacement: Dimensions: Guns:

Machinery:

Complement: General

Built by Charleston S.B. & D.D. Co. Launched in 1946. Former salvage tug, adapted as a submarine rescue vessel in 1947. Transferred from the United States Navy on 15 Aug. 1950, under MAP. Pennant No. A 67. NATO Pennant No. A 584.



KURTARAN

1966, Turkish Navy, Official

BOOM DEFENCE VESSELS

KALDIRAY AG 5

680 tons standard (960 tons full load)
148} (pp.), 173 (o.a.)×35×13½ feet
1-40 mm. AA., 3-20 mm. AA.
4 MAN diesels, 2 shafts. B.H.P.: 1,450=12 kts. Displacement: Dimensions: Guns: Machinery: Complement:

Net tender built under the U.S. off-shore procurement programme by Kröger, Rendsburg for transfer to Turkey under MAP in Apr. 1959. U.S. No. AN 104. Launched on 20 Oct. 1960. Delivered on 25 Feb. 1961.



KALDIRAY

1964, Turkish Navy, Official

AG 4 (ex-Larch, ex-AN 21)

Displacement:
Dimensions:
Guns:
Guns:
Machinery:
Displacement:
146 (w.l.), 163 (o.a.)×30½×10½ feet
1—3 inch AA.
Diesel-electric, B.H.P.: 800=12 kts,

General

Former U.S. netlayer of the "Aloe" class. Built by American S.B. Co., Cleveland, Laid down in 1940. Launched on 2 July 1941. Completed in 1941. Acquired in 1947. Pennant No. A 45. Photograph in the 1955-56 to 1963-64 editions.

AG 1 (ex-Barbarian, 21 Oct. 1937)

AG 2 (ex-Barbette, 15 Dec. 1937) AG 3 (ex-Barfair, 21 May 1938)

Displacement: Dimensions: Guns: Machinery: Boilers: Complement:

750 tons standard (1,000 tons full load) 150 (pp.), 173½ (o.a.)×32½×9½ feet 1—3 inch AA. expansion, I.H.P.: 850=11.5 kts.

General

Former British boom defence vessels. First two built by Blyth S.B. Co., third by Lewis & Sons. Launch dates above. A photograph of AG 1 appears in the 1957edition.



AG 2

1966, Turkish Navy, Official

TENDERS

ISIN (ex-Imia Layteri)

390 tons full load $110\times24\times7$ feet 1 M.G. Crossley diesel, B.H.P.: 330 32 tons Displacement: Dimensions: Guns Machinery:

Oil fuel

General
Built by James Pollock, Sons & Co., Faversham, Launched in 1941. Coaster type.
Formerly employed in charging the batteries of submarines, Is now a main diving ship. Photograph in the 1957-58 and earlier editions. Pennant No. A 570.

The gate vessels ex-YNG 45, 46 and 47 were built by U.S. for transfer to Turkey under MAP.

Disposale

The tenders Akin and Dalgie have been discarded, it is officially stated.

PRESIDENTIAL YACHT

HALAS (ex-Umur)
Completed and commissioned for service in 1956. Renamed Halas in 1961.

OILERS

2 New Construction

ALBAY HAKKI BURAK

3,800 tors full load (officially revised figure) 251 $\frac{1}{2}$ (pp.), 274 $\frac{2}{3}$ (o.o.)×40 $\frac{1}{2}$ ×18 feet 2 G.M. diesels, electric drive. B.H.P.: 4,400=16 kts. Displacement: Dimensions: Machinery:

88

Complement:

General Two new tankers for the Turkish Navy were ordered from Gölcük Dockyard, Izmit. Alban Burak was built in 1964.

YÜZBASI TOLUNAY

Displacement: 2.500 tons standard (3,500 tons full load) $260{\times}41{\times}19\frac{1}{2}$ feet Atlas Polar-diesels. 2 shafts. B.H.P.: 1,920=14 kts. Dimensions:

Machinery: Built at Taskizak by Haskoy Naval D.Y., Istanbul, Launched on 22 Aug. 1950.



YUZBASI TOLUNAY

Turkish Navy, Official

AKAR (ex-Istanvul, ex-Adour)
Displacement: 4,289 tons light (13,200 tons full load)
Dimensions: 433×523×27 feet
Machinery: Parsons geared turbines. S.H.P.: 5,200=15 kts

Pennant No. A 48. NATO Pennant No. A 580.



AKAR

1959, A. & J. Pavia

AKPINAR (ex-Chiwaukum)
Displacement:
Measurement:
Dimensions: 700 tons light (2,700 tons full load) 1,453 tons deadweight 212\delta (w.l.), 220\delta (\sigma,\alpha)\times37\times12\delta feet Diesel. B.H.P.: 800=10 kts. Machinery:

General Formerly the United States oiler AOG 26. Built by East Coast S.Y. Inc., Bayonne Laid down on 2 Apr. 1944. Launched on 5 May 1944. Completed on 22 July 1944 Transferred to Turkey in 1949. A photograph appears in the 1957-58 edition.

GSLCUK

Displacement: Measurement: Dimensions: Machinery:

1.255 tons 750 tons deadwelght 185×31½×10 feet B. & W. diesel. B.H.P.: 700=12·5 kts.

Built by Gölcük Dockyard, Ismit. Launched on 4 Nov. 1935. A photograph appears the 1957-58 and earlier editions. Pennant No. A 573.

The U.S. harbour tugs ex-YTL 155, 751 were transferred under MAP.

THE ROYAL NAVY

Admiralty Board

Secretary of State for Defence (Chairman): The Right Honourable Denis W. Healey, M.B.E., M.P.

Minister of Defence for the Royal Navy (Vice-Chairman): Mr. Joseph Percival William Mallalieu, M.P.

Parliamentary Under-Secretary of State for Defence for the Royal Navy: The Lord Winterbottom.

Chief of the Naval Staff and First Sea Lord: Admiral Sir Varyl Cargill Begg, G.C.B., D.S.O., D.S.C.

Chief of Naval Personnel and Second Sea Lord: Admiral Sir Desmond Parry Dreyer, K.C.B., C.B.E., D.S.C.

Controller of the Navv:

Vice-Admiral Horace Rochfort Law, C.B., O.B.E., D.S.C. Vice-Chief of the Naval Staff:

Vice Admiral Sir John Fitzroy Duyland Bush, K.C.B., D.S.C. and

Deputy Chief of the Naval Staff: Vice-Admiral Hugh Richard Benest Janvrin, C.B., D.S.C.

Chief of Naval Supplies and Transport and Vice-Controller: Vice-Admiral Sir Raymond Shayle Hawkins, K.C.B.

Chief Scientist (Royal Navy): Mr. Basil Wilfrid Lythall, C.B., M.A.

Second Permanent Under-Secretary of State (Royal Navy): Sir (Arthur Lucius) Michael Cary, K.C.B.

Principal Technical Officers not on the Admiralty Board

Director-General, Ships:
Sir Alfred J. Sims. K.C.B., O.B.E., M.R.I.N.A., R.C.N.C.
Director-General of Aircraft (Naval):

Rear-Admiral Arthur Francis Turner, C.B., D.S.C.

Director-General of Weapons (Naval):

Rear-Admiral Andrew Mackenzie Lewis.

Chief Polaris Executive:

Vice-Admiral Sir Hugh Stirling Mackenzie, K.C.B., D.S.O. and Bar, D.S.C.

Polaris Project Officer:

Rear-Admiral Frederick Dossor, C.B., C.B.E., B.Sc., M.I.E.E., M.Amer.I.E.E.

British Naval Attaché, Washington: Rear-Admiral Peter M. Compston American Naval Attaché, London: Rear-Admiral James W. O'Grady

Personnel

1960-61: 102,000 1961-62: 100,000 1957-58: 121,500 1958-59: 112,000 1963-64: 100.000 1964-65: 103.000 1965-66: 104.000 1966-67: 103,000 1959-60: 106,000 1962-63: 100,000

Navy Estimates

1963-64: £439,951,600 1964-65: £487,690,000 1965-66: £589,040,000 1966-67: £597,567,000 1957-58: £316,000,000 1960-61: £397,500,010 1958-59: £339,400,000 1959-60: £370,700,000 1961-62: £406,073,400 1962-63: £422,273,000

Mercantile Marine

Lloyd's Register of Shipping: 4,437 vessels of 21,530,264 tons gross

Duisiala Conti

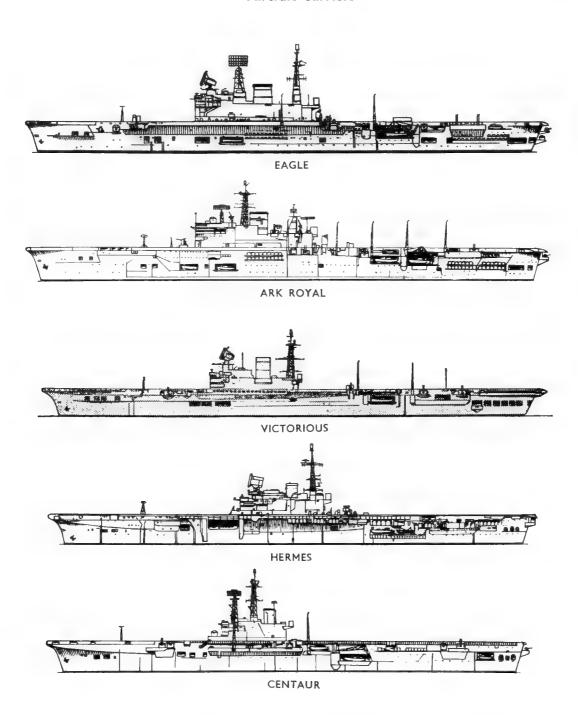
Name	Maker	Туре	Dimensions	Power Plant	Armament	Performance	
SEA VIXEN Hawker FAW. Mks. 1 Siddeley and 2		Two-Seat Day and Night All-Weather Fighter	Wing Span 50 ft. Folded 22 ft. 3 in. Length 53 ft. 7 in.	Two Rolls - Royce Avon 208 Turbojets	Firestreak or Red Top, bombs, rockets, Bullpup	Maximum Speed, approx.700 m.p.h.	
PHANTOM II McDonnell (U.S.A.)		2-Seat All-Weather Interceptor and Attack Fighter	 		Sidewinder and Sparrow AAM's, Bullpup and Martel ASM's bombs, rockets, etc.		
BUCCANEER 5. Mks. 1 and 2	Hawker Siddeley			Nuclear Weapons Bombs, rockets, Bullpup missiles.	Speed in tran- sonic range at low altitudes		
GANNET AEW, Mk. 3	Westland	Three-Seat Early Warning Aircraft			None	Maximum Speed, approx. 250 m.p.h.	
WASP HAS. Mk. 1	Westland	Five-Seat Anti-Submarine Helicopter	Rotor dia.: 32 ft. 3 in. Overall length (blades folded) 30 ft. 4 in.	One Bristol Siddeley Nimbus Shaft-turbine	Anti-Submarine homing torpedoes or missiles	Maximum Speed, 120 m.p.h. Range, 270 miles	
WESSEX HAS. Mk. 1	Westland Multi-Seat Anti-Sub- marine and Trans- port Helicopter 48 ft. 4½ in. One Napier Gazelle 161 Shaft - Turbine Engine		Anti-Submarine Weapons SS. 11 missiles.	Maximum Speed, 132 m.p.h. Range, 390 miles			
WESSEX HU. Mk. 5	Westland	Commando assault transport	Rotor dia. 56 ft. Fuselage Length: 48 ft. $4\frac{1}{2}$ in.	Two coupled Bristol Siddeley Gnome Shaft turbines	SS. 11 missiles guns, rockets.	Maximum Speed, 132 m.p.h. Range, 478 miles	

British Naval Guided Missiles

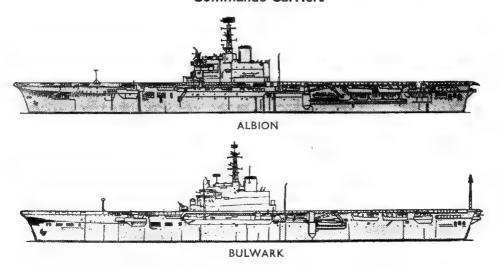
Туре	Name	Maker	Length ft.	Propulsion	Speed Mach.	Range miles	Guidance System	Notes
SURFACE-TO-AIR	Seacat	Short Bros. & Harland	4.85	Solid propellent			Radio command	Close range anti-aircraft missile
	Seadart	Hawker Siddeley		B.S. Odin ramjet, Solid propellent booster				Test firings began 1965
	Seaslug	Hawker Siddeley	19.65	I.C.I. Solid propellent and solid boosters			Beam- rider	Carried by County Class destroyers
AIR-TO-AIR	Firestreak	Hawker Sideley	10.5	Solid propellent	2.0+	0.75—5	Infra-red	Carried by Sea Vixen Mk. I fighters
	Red Top	Hawker Sideley	11.5	Solid propellent	3.0	7	infra-red	Carried by Sea Vixen Mk. II fighters
	Sidewinder	N.O.T.S. (U.S.A.)	9.2	Solid propellent	2.5	2	Infra-red	Carried by Phantom II fighters
AIR-TO-SURFACE	Bullpup	Martin, Maxson (U.S.A.) and European consortium	10.5	Liquid propellent	1.8	7	Radio Command	Carried by Phantom II, Buccaneer, Sea Vixen
	S.S. 11	Nord- Aviation (France)	3.9	Solid propellent	335 m.p.h.	1.75	Wire guidance	Carried by Wessex helicopters
ANTI-SUBMARINE	Ikara	British Aircraft Corporation		Solid propellent			Carries homing torpedoes	To be mounted in Type 82 guided missile destroyers

Scale 150 ft.=1 inch

Aircraft Carriers

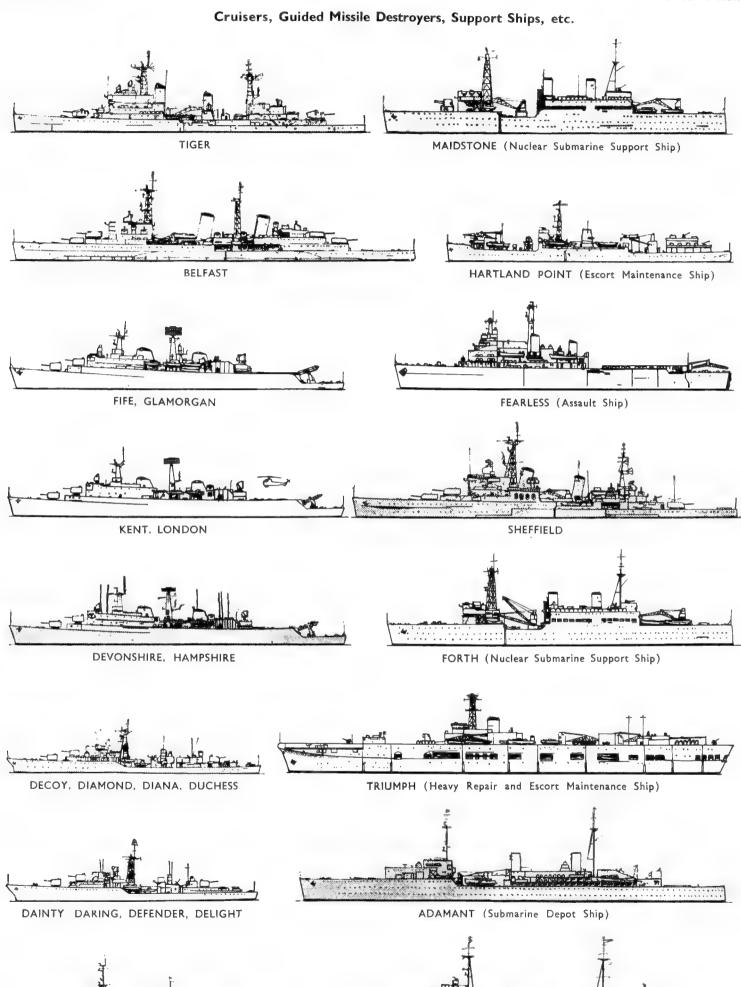


Commando Carriers



Silhouettes-contd.

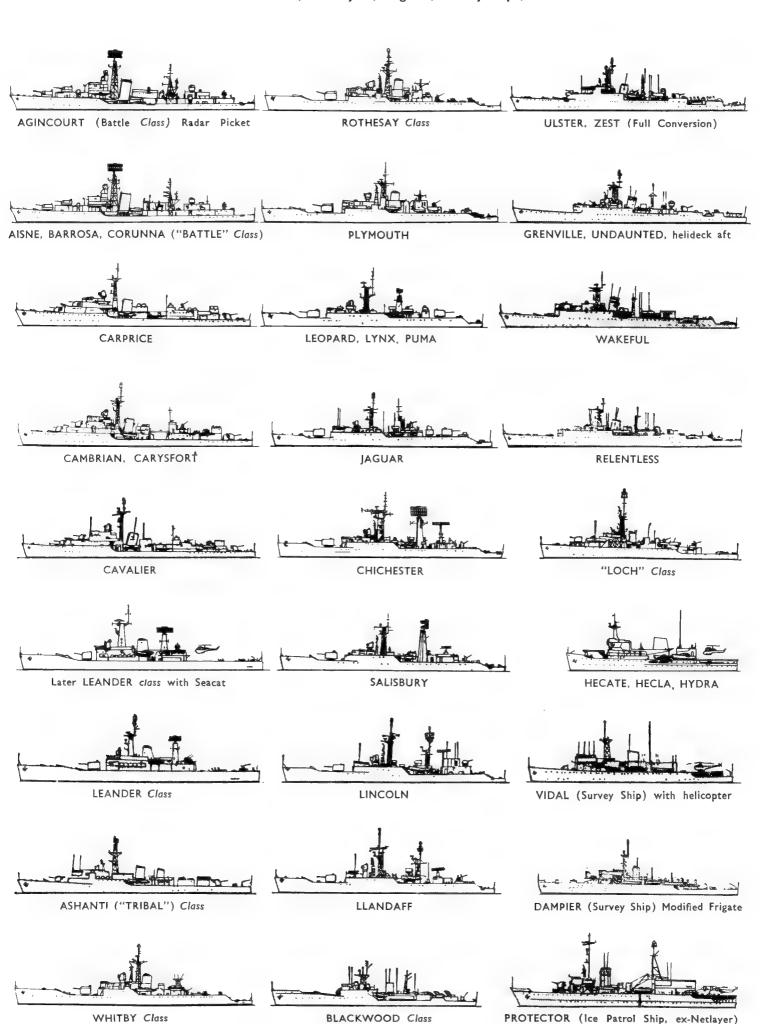
Scale: 150 ft.=1 inch.



TYNE (Destroyer Depot Ship)

MANXMAN (Minesweeper Support Ship)

Radar Pickets, Destroyers, Frigates, Survey ships, etc.



AICRAFT CARRIERS

HERMES (ex-Elephant)

Deck Letter

Pennant No. R 12

Builders

Laid down 21 June 1944

Displacement:

Dimensions:

23,000 tons standard, 27,800 tons full load)
Length: 650 (pp.), 744½ (o.a.) feet. Beam (hull): 90 feet; Breadth (overall): 160 feet. Draught: 28 feet 2 quadruple launchers for "Seacat" close range ship-to-air missiles

Guided weapons;

Aircraft:

cat" close range ship-to-air missiles
22 plus 8 helicopters
2 steam
Parsons geared steam turbines.
2 shafts. S.H.P. 78,000=28 kts.
4 Admiralty 3-drum type
1,834 (190 officers, 1,644 men)
2,100 with air squadrons Catapults: Machinery: Boilers: Complement:

2,100 with air squadrons

General

Originally a sister and name ship of a class including Albion, Bulwark and Centaur, see following pages, but her design was modified so that she was virtually of a different type, being more advanced and incorporating new equipment and improved arrangements, including five post-war developments—angled deck, steam catapult, landing sight, 3-D radar, and deck-edge lift. She is air-conditioned throughout. The ship was manned for trials on 23 Oct, 1959, accepted from her builders on 18 Nov. 1959, commissioned for service with the Royal Navy om 25 Nov, 1959, and embarked her air squadrons and joined the Fieet in the summer of 1960. Long refit 1964 to 1966, osting £10,000.000, during which the "Alaskan Highway", was stepped out on the starboard side of the Island, adding 15½ feet to the overall breadth of the ship, her ten 40 mm. AA, guns in five twin mountings were suppressed and two "Seacat" guided weapons systems installed, and living accomodation improved.

Flight Deck
The flight deck is angled to 6½
degrees off the centre line of the
ship, the biggest angle that can be
practically contrived in am aircraft
carrier of the size.

carrier of the size.
Engineering
The ship has the latest system of remote control for her engines, coupled with automatic feed for her boilers, whereby with the entire complement of officers and men under cover and protected in "the citadel," a self-contained section of the ship proof against radio-active fall-out, the ship can be safety steamed through an atomic cloud.

Electrical an atomi Electrical

The electrical plant is a 440 volt, 3 phase, 60 cycle A.C. installation, with a generating capacity of 5,440 kW.

Drawing
Port elevation and plan. Drawin 1966 Scale: 128 feet=1 inch.

Cancelled Construction
Approval to build a new aircraft carrier of about 50,000 tons displacement, officially announced on 30 July 1963, was rescinded on 22 Feb. 1966.

Vickers-Armstrongs, Barrow-in-Furness

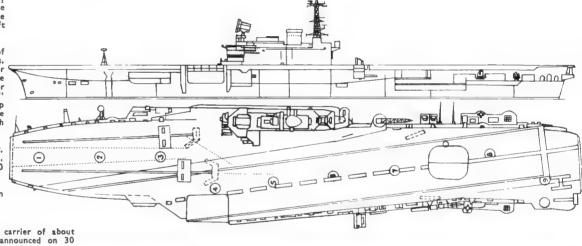
Launched 16 Feb. 1953

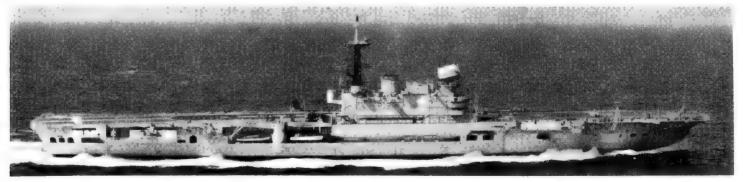
Completed 18 Nov. 1959



HERMES (on trials after 1964-66 refit)

1966. Official





HERMES (sponsonned deck added outside island)

1966, Official



HERMES (after 1964-66 refit, guns removed, "Seacats" added)

1966. Official

Completed

1950

Lounched

3 May

Aircraft Carriers-contd.

Builders Cammell Laird, Birkenhead

ARK ROYAL (ex-Irresistible)

Deck Letter

Displacement: Dimensions:

43,340 tons standard (53,340 tons full load)
Length: 720 (pp.), 810½ (o.a.)
Beam: (hull); 112¼, (overall):
164½ feet. Draught 36 feet
4—4·5 inch d.p. (2 twin); 18
—40 mm. (2 sextuple, 3 twin);
2—2 pdr. saluting (see Gunnery)
40 plus 8 helicopters
2 improved steam
Parsons single reduction geared turbines. 4 shafts. S.H.P.:
152,000=31·5 kts.
8 Admiralty 3-drum type (400
1b. per sq. in. pressure, 600
degrees Fahrenheit superheat)
5,500 tons
1,632 to 1,745 (2,295 to 2,345 with air squadrons) Guns:

Aircraft: Catapults: Machinery:

Boilers:

Oil fuel: Complement;

With air squadrons)

General

Fitted with modern equipment for operating jet aircraft including 5½ degrees angled deck, two centre line lifts, two improved steam catapults, a more effective deck landing aid, new type of arrester gear, and improved hangar ventilation. First British aircraft carrier to be provided with steam catapults and associated installation. Began contractors' sea trials on 4 June 1954. First commissioned on 22 Feb. 1955. Had first side lift installed in a British aircraft carrier, situated amidships on the port side and serving the upper hangar. Ship originally cost £21,428,000. Refitted in 1959 when the side lift was removed, the deck park provided by the angled deck having, to a large extent, obviated its necessity, and a new lattice stumo mast for a larger radar scanner stepped abaft the bridge. Refitted in 1961, when the deck landing projector sight, "Hilo" long range guidance system, and more powerfull steam catapults were installed.

Scheduled to undergo a three-years reconstruction and modernisation costing about £30,000,000, commencing at the end of 1966.

Gunnery

Originally mounted 16—4-5 inch in eight twin turrets, two on each beam forward and two on each



Laid down

3 May 1943

ARK ROYAL

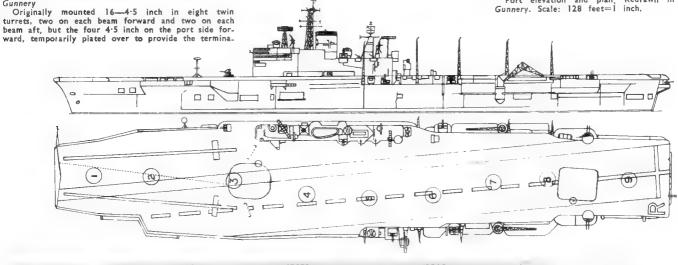
Penant No. R 09

tion of the angled deck, were removed entirely in 1956 to allow unimpeded flying off. The 6-barrelled 40 mm. mounting before the bridge was also removed. The four 4.5 inch on the starboard side forward and the six single 40 mm. were removed in 1959. The four 4.5 inch in the two forward turrets on the after sponsons were removed in 1964.

1966. Official

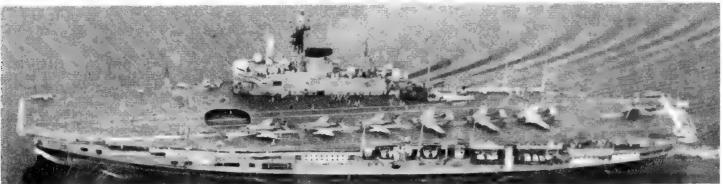
Nomenclature
Following the sinking of the previous Ark Royal in Nov. 1941, the mame was allocated to a projected considerably larger aircraft carrier designated Irresistible (the present Ark Royal).
Photographs
Sembord quarter view port broadside view and

Photographs
Starboard quarter view, port broadside view, and overhead plan view, all before conversion, and showing side lift, in the 1959-60 and earlier editions.
Drawing
Port elevation and plan Redrawn in 1965. See Gunnery. Scale: 128 feet=1 inch.





ARK ROYAL (after 1964 refit)



Added 1965, Official

Aircraft Carriers-contd.

Builders Harland & Wolff, Belfast

Deck Letter CENTAUR R 06 22,000 tons standard, 27,000 tons full load Length: 650 (pp.), 737½ (o.a.) feet. Beam: 90 feet. Extreme breadth: 123 feet. Draught: 27 Displacement: Dimensions:

feet

Pennant No.

feet
10—40 mm. AA. (4 twin, 2 single) 4—3 pdr. (saluting)
17 plus 8 helicopters
2 steam Guns: Catapults:

2 steam
Parsons geared turbines, 2 shafts.
S.H.P.: 78,000=28 kts.
4 Admiralty 3-drum type
4,000 tons
1,028 ship's company, including air staff), 1,330 to 1,390 (including air squadrons) Machinery: Oil fuel:

Complement:

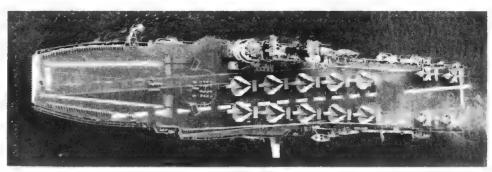
General

Improvements incorporated during construction increased the originally designed displacement from 18,300 tons standard, An enlarged version of the "Majestic" design with propelling machinery of nearly twice the power to give an extra five knots speed (29.5 kts. on trials) and bringing it more into line with modern fleet aircraft requirements. Cost £10,434,000 excluding guns, aircraft and equipment, An "interim" (5) degrees) angled deck was installed with necessitated the removal of three twin 40 mm. mounts and the extension of flight deck on port side amidships. Five arrester wires spaced equally along the angled deck. Equipped with steam catapults and new arrester gear in 1957. Completed an extensive refit in Mar. 1961, a small sponson being fitted on the port side right aft, Refitted in 1963 with a Type 965 single "bedstead" aerial on a small lattice tower in place of the light tripod mast at the forward end of the island.

Class
Of two sister ships, Bulwark was converted into a commando carrier in 1959-60, and Albion was similarly converted in 1961-62, see later page.
Of the other five ships of this class originally ordered, Arrogant, original Hermes, Monmouth and Polyphemus were cancelled in 1945; and Hermes (ex-Elephant) was completed to a modified design (see previous page).

Disposals of "Majestic" Class Magnificent (lent to Canada from 1946 to 1957) was scrapped in 1965. Powerful (renamed Bonaventure) was completed for Canada; Majestic (renamed Melbourne) was completed for Australia; and Terrible (renamed Sydney) was sold to Australia. Hercules was sold to India in 1957 for completion and modernisation and was commissioned for service and renamed Vikrant in Mar. 1961. Leviathan (suspended in 1946 and never completed) was awaiting disposal in 1966.

Disposals of "Colossus" Class
Venerable (renamed Karel Doorman) was sold to Netherlands in 1948,
Colossus (renamed Arromanches) was
sold to France in 1951: two were
completed as maintenance aircraft
carriers—Perseus (scrapped in 1958)
and Pioneer (scrapped in 1954: Vengeance was sold to Brazil in 1956
and after being modernised was
commissioned under new name Minas
Gerals in Dec. 1960, Warrior was
sold to Argentine in July 1958 and
was commissioned under new name
Independencia in Jan, 1959. Glory was
scrapped in 1961 and Ocean and
Theseus in 1962.



Laid down

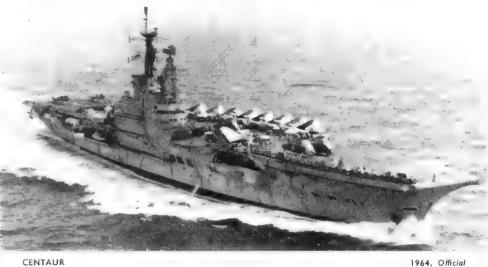
30 May 1944

CENTAUR (aerial plan view, showing angled deck)

1965, Official

Completed

1 Sep. 1953



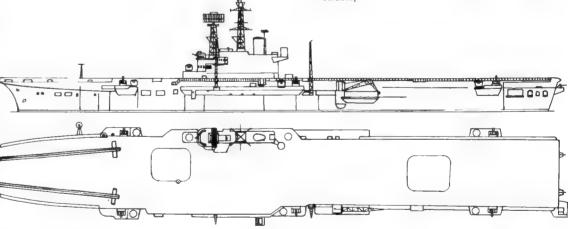
CENTAUR

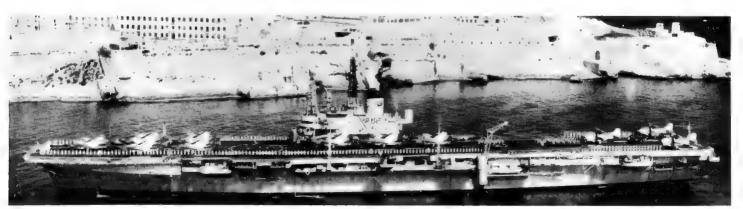
Drawing
Port elevation and plan. Scale: 128 feet=1 inch. The
6-barrelled 40 mm. AA. gun abaft the island, a twin
40 mm. mounting, and two single 40 mm. guns were

Launched

22 Apr. 1947

Photographs
A starboard quarter oblique aerial view appears in the 1957-58 to 1959-60 editions, a starboard broadside view in the 1958-59 to 1961-62 editions a port bow oblique aerial view in the 1960-61 to 1963-64 editions, a dead overhead view in the 1961-62 to 1964-65 editions, and a port oblique aerial view showing forward lift-well open in the 1962-63 to 1965-66 editions.





Aircraft Carriers—contd.

EAGLE (ex-Audocious)

Deck Letter

Pennant No. R 05

Builders Laid down Harland & Wolff, Belfast 24 Oct. 1942

Launched 1946 19 Mar.

Completed 1 Oct.

Reconstructed 1951 H.M. Dockyard, Devonport 1959-64

Displacement:

Guns:

Dimensions:

44,100 tons standard (54,100 tons full load)
Length: 720 (pp.), 811½ (o.a.)
Beam (hull): 112½, (overall);
171 feet. Draught 36 feet.
8—4-5 inch d.p. (2 twin starboard, 2 twin port); 4—3 pdr.
6 quadruple launchers for "Seacat" close range ship-to-air missiles (3 starboard, 2 port, 1 aft)
34 plus 10 helicopters
2 steam (see Modernisation)
Parsons single reduction geared turbines. 4 shafts, S.H.P.:
152,000=31-5 kts.
8 Admiralty 3-drum type

Guided weapons: Aircraft:

Catapults: Machinery:

152,000=31.5 kts.

8 Admiralty 3-drum type
1,745 including ship's air staff,
but excluding complements of
embarked air squadrons); 2,750 Boilers: Complement: max. accommodation

General
Ordered on 19 May 1942. Accepted into the Royal
Navy on 1 Mar, 1952. Of 90 per cent welded construction. Damage control arrangements are exceptionally complete Originally cost £15,795,000. Modernisation cost £31,000.000.

Reconstruction

Reconstruction
Fully angled flight deck at 8½ degrees, new flight deck armour, and Type 984 radar. Two steam (instead of hydraulic) catapults for launching the latest naval aircraft. Superstructure half as long again as former Island and lattice mast shorter and thicker than previously stepped. The most up-to-date living accommodation was also incorporated, Reconstruction commenced of the end of 1959, and was completed in 1964. Commissioned for service on 14 May 1964.

Anti-Contamination
Equipped with an improved and built-in pre-wetting system to counteract contamination n the event of fallout or chemical hazard

Electrical

During reconstruction the generating capacity of the ship was increased to 8,250 kw.

Class
Sister ship of Ark Royal, see previous page. Two
more large aircraft carriers of this type, Africa and
original Eagle were cancelled at the end of the Second
World War. Three much larger aircraft carriers, to
have been named Gibraltar, Malta and New Zealand,
were also cancelled.

Nomenclature
After the first carrier Eagle was lost in August
1942 the name was given to an aircraft carrier of the
above class ordered from Vickers-Armstrongs, Ltd.,
Tyne, but this vessel was cancelled at the end of the
war, and the sister ship, which had been begun as the
Audacious was renamed Eagle on 21 Jan. 1946.

Drawing
Port elevation and plan after reconstruction. Drawn in 1964. Scale: 128 feet=1 inch.

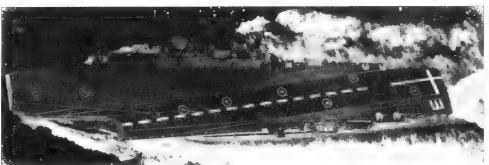


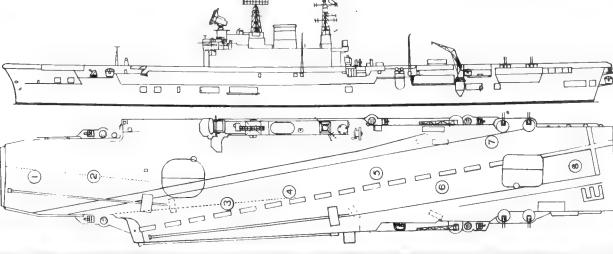
EAGLE

EAGLE



1964, Official







Aircraft Carriers-contd.

Deck Letter Pennant No. VICTORIOUS R 38

Builders on-Tyne

Engineers Vickers-Armstrongs, Newcastle Wallsend Slipway on-Tyne Wallsend-on-Tyne

rs Laid down Launched Completed Engineering 4 May 1937 14 Sep. 1939 15 May 1941

Rebuilt Dockyard, 58 Portsmouth, 1950-58

Displacement:

Dimensions:

30,530 tons standard (35,500 tons full load)
Length: 673 (pp.), 710 (w.l.), 781 (o.a.) feet. Beam (hull):
103 list Width loverall:
157 feet braught: 11 feet.
8—3 inch, 50 cal. AA (2 twin forward 2 twin sft), 4—1 pdr.
25 plus 8 helicopters 2 steam

Aircraft:

Catapults: Armour:

25 plus 8 helicopters
2 steam
4;" belt, 4½" hanger side, 3½"
flight deck, 2½" hangar deck
3 Parsons geared steam turbines, 3 shafts S.H.P.: 111,000
=31 kts. (trial speed 32:2 kts.)
6 Foster Wheeler
2400 Machinery:

Boilers:

6 Fos 2,400

Complement:

General

General Ordered on 13 Jan. 1937. This ship originally had a displacement of 22,600 tons standard and 29,100 tons full load, dimensions of 751×95½×29¼ feet, and a main armament of 16—4·5 inch guns.

full load, dimensions of 751×95½×29½ feet, and a main armament of 16—4·5 inch guns.

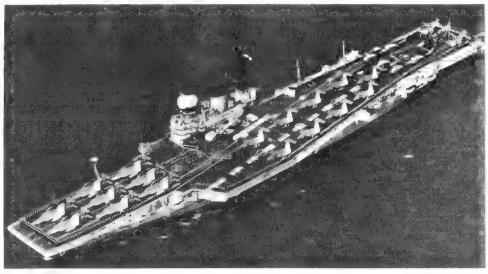
Reconstruction
Rebuilt in H.M. Dockyard, Portsmouth, July 1950 to Jan, 1958. Re-launched (floated out of dry dock) on 19 May 1955. She has a fully angled flight deck, steam catapults and the most modern landing control system. Her electronic equipment is of the most advanced design. It includes a high powered Type 984 radar set which can detect aircraft targets at considerable range and height. With this radar set goes a new display system which makes is possible to clarify the airbone target situation quickly and easily. This enables her to exploit to the full the capabilities of the latest and new generations of naval aircraft. Two mirror sight deck landing aids and new high speed lifts were fitted. Her reconstruction involved increase in overall length by 30 feet, breadth by 55 feet, hull beam by 7½ feet and draught by ½ feet. Her 3 inch guns are in twin mounts of new pattern. She was first aircraft carrier in the Royal Navy with a fully angled deck. She has the latest arrester gear. Her modernisation included re-boilering, the installation of new arment and improved accommodation. Drowing Drawing

Starboard elevation and plan. Scale 128 feet=1 inch.

Refit

The ship underwent a long refit in H.M. Dockyard, Portsmouth from 1 May 1962, to 9 Aug. 1963, when four 3-inch AA. guns and six 40 mm. AA. guns were removed, flight deck strengthened, flying control position enlarged, access deck added outside island, projector sights substituted, catapults and communications system improved and air-conditioning extended.

The eight-months refit, Aug. 1965 to Apr. 1966, at Portsmouth, costing £2,500,000, mainly consisting of improving living accommodation and communications, it was officially stated



VICTORIOUS (after 1965-66 refit)

1966. Official

Flight Deck

An angle of 83 degrees was achieved by extending the flight deck outwards for 41 feet on the port side for a length of 120 feet. It overhangs the ship's side by 355 feet, the extension being supported by a very large sponson bracketed into the ship's structure, and counterbalanced by the weight of the island superstructure opposite on the starboard side.

The flight deck, over 775 feet long, is strong enough to take the heaviest Fleet Air Arm machines, including the Blackburn Buccaneer. Two parallel track 145 feet catapults are fitted forward with aircraft positioners and jet blast deflectors. The arrester comprises four wires with an average span of 80 feet.

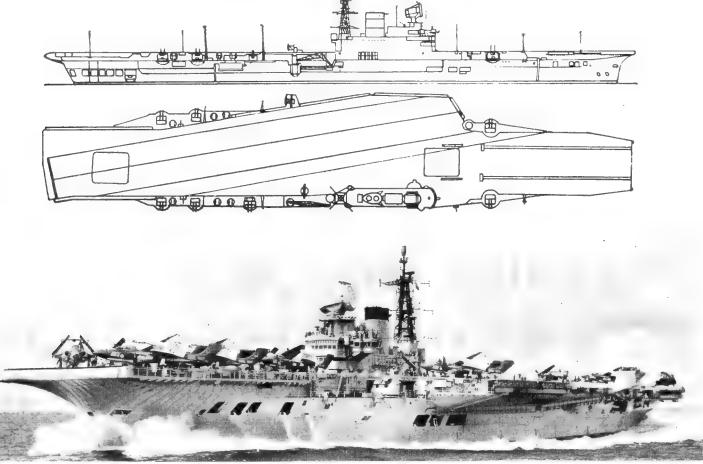
The generating capacity of the ship was increased from 2,400 kW to 4,200 kW. There are eight turbogenerators and four diesel generators

Abbearance

Appearance
Easily distinguished from other carriers by rather
smaller island, very large radar aerial surmounting the
bridge, long overhang at the stern, massive angled deck
terminal sponson and black band round top of funnel.

Engineering
The ship can be steamed from the machinery control room by hydraulic remote controls. Steam conditions: 440 lb, per sq. inch pressure; 750 deg. Fah. superheat.

Photographs
A port surface view and a port bow oblique aerial view appears in the 1960-61 and 1961-62 editions; a port bow surface view and a starboard bow oblique aerial view in the 1959-60 edition; a starboard quarter surface giew, a port quarter aerial view, and a starboard broadside aerial view in the 1962-63 and 1963-64 editions, a dead overhead aerial plan view, showing the fully angled deck, in the 1959-60 to 1963-64 editions, and a port bow oblique aerial view in the 1962-63 to 1965-66 editions.



ALBION BULWARK

Guns:

Boilers Complement: Deck Letter

Pennant No. R 07

Laid down 23 Mar. 1944 10 May 1945

COMMANDO CARRIERS

Builders

Wigham Richardson Harland & Wolf

Ltd., Belfast

Hunter &

Launched 1947 6 May 22 June 1948 Completed 26 May 1954 4 Nov. 1954 Converted 1961-62 1959-60

2 Modified "Centaur" Class

Displacement: Dimensions:

23,300 tons standard, 27,300 tons full load
Length: 650 (pp.), 737½ (o.a.) feet. Beam (hull): 90 feet.
Breadth (overall): 123½ feet.
Draught: 28 feet
8—40 mm. AA: (4 twin); 4—3 pdr. See Gunnery notes
16 helicopters
4 LCVP
Parsons geared turbines. 2 shafts.

Aircraft. Landing craft: Machinery:

4 LCVP
Parsons geared turbines. 2 shafts.
S.H.P.: 78,000=28 kts.
4 Admiralty 3-drum type
1,035 plus 733 Royal Marine
Commando and troops (900 in
Bulwark). Accommodation for
1,923 to 1,937 officers and men

1,923 to 1,937 officers and men General
Former sister ships of Centaur, see previous page. Originally cost £9,836,000 and £10,386,000, respectively, excluding guns aircraft and equipment. Converted into commando carriers in 1961 (Albion) and 1959 (Bulwark). A full strength commando is available, which the ships can quickly transport and land complete with equipment, wherever required. Their helicopters are also able to disembark the commando's vehicles. The ships have sufficient stores and fuel to support the commandos in active operations ashore, and can re-embark the unit speedily when required. They not only reinforce the traditionally close association of the Corps of Royal Marines with the Royal Navy, but give these versatile troops greater mobility and usefulness, and enable them to be fully self-supporting. The ships are fully convertible to the antisubmarine role. They are able, at short notice, and entirely within their own resources to adapt their helicopters for anti-submarine work. Bulwark, the first ship of her kind to serve in the Royal Navy, was converted at H.M. Dockyard, Portsmouth, in 1959 and commissioned as a commando carrier on 19 Jan. 1960. Albion entered H.M. Dockyard, Portsmouth, in Dec. 1960, and was taken in hand in Feb. 1961 for conversion which was completed in July 1962. She commissioned on 1 Aug. 1962. Gunnery 1962.

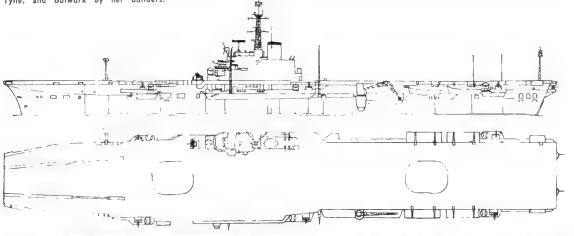
1962.
Gunnery
Eight 40 mm. AA. guns were removed during the inital conversion of Bulwark to provide space for four vehicle personnel landing craft carried at built-in gantries, leaving her with 18—40 mm. AA. guns As converted Albion has one twin 40 mm. mounting in each quadrant; and Bulwark has since also been reduced to this armament.
Engineering
The three-bladed propeller in Bulwark was replaced by a four-bladed propeller. At 28 knots the propellers work at 230 revolutions per minute. Albion was engined by Walsend Slipway & Engineering Co. Ltd., Tyne, and Bulwark by her builders.

ALBION

Conversion Conversion
Basically Bulwork was not changed during her inital conversion, although the fixed wing capablity, the arrester wires and catapults were removed. Various alterations and modifications were made to render the ship suitable as as an all-helicopter troop carrier with 16 Westland Whirlwind aircraft, replaced at a later date by the Wessex and four landing craft (vehicle or personnel) The ship was fitted with the most

extensive air conditioning system in the Royal Navy. In 1963 Bulwark was further refitted to the same standard as Albion, with slight variation in air conditioning.

In her initial conversion Albion embodied a num-ber of improvements and was able to carry Wessex helicopters and a larger military force. Her extensive modifications included alteration to the angled flight deck and the removal of catapult and arrester gear.



Photographs

A port broadside aerial view, and a dead overhead plan view of Bulwark after conversion appear in the 1960-61 edition, a starboard surface view in the 1961-62 editions, another aerial plan view in the 1961-62 editions, a port broadside aerial view with Whirlwind helicopters flying above in the 1961-62 to 1963-64 editions, and starboard broadside aerial view with helicopter formation in the 1962-63 and 1963-64 editions. A port broadside view of Albion after conversion appears in the 1962-63 edition (Addenda) and a starboard quarter surface view in the 1962-63 and 1963-64 editions A port broadside surface view in the 1962-63 editions in the 1964-65 and 1963-64 editions. Drowing

Drawing
Port elevation and plan of Bulwark. Drawn in 1960, Scale; 128 feet=1 inch.



Nuclear Powered Ballistic Missile Submarines (SSBN)

4 "Resolution" Class

Displacement: Dimensions:

Over 7,500 tons (official figure) Length: 425 feet, Beam 33 feet. Draught: 30 feet. 16 "Polaris" tubes amidship for A-3 model missiles with a range

Guided Weapons:

Tubes:

A-3 model missiles with a range of 2,875 miles 6—21 inch forward 1 pressurised water-cooled ruclear reactor. Geared steam turbines. 1 shaft. Speed=20 kts. (surface,) 25 kts. (submerged) 133 (13 officers, 120 ratings) Two crews (see General notes)

Complement:

RENOWN

REPULSE RESOLUTION

General
In Feb. 1963 it was officially stated that is was intended to order four or five 7,000 ton nuclear powered submarines, each to carry 16 "Polaris" missiles, and it was planned that the first would be on patrol in 1968. Their hulls and machinery would be of British design. As well as building two submarines Vickers-Armstrongs would give lead yard service (i.e. act as the "parent" firm) to the builder of the other two. Four Polaris submarines were in fact ordered on 8 May 1963 (date official announcement).

The intention to build a fifth Polaris submarine was confirmed by the then Ministry of Defence on 26 Feb. General

SUBMARINES

Builders
Cammell Laird & Co. Ltd., Birkenhead
Vickers-Armstrongs Ltd., Barrow-in-Furness
Vickers-Armstrongs Ltd., Barrow-in-Furness
Cammell Laird & Co. Ltd., Birkenhead 25 June 1964 12 Mar. 1965 26 Feb. 1964 19 May 1965 July 1968 July 1969 July 1969 July 1968 July 1969 15 Sep. 1966

Launched

Laid down

Scheduled Completion

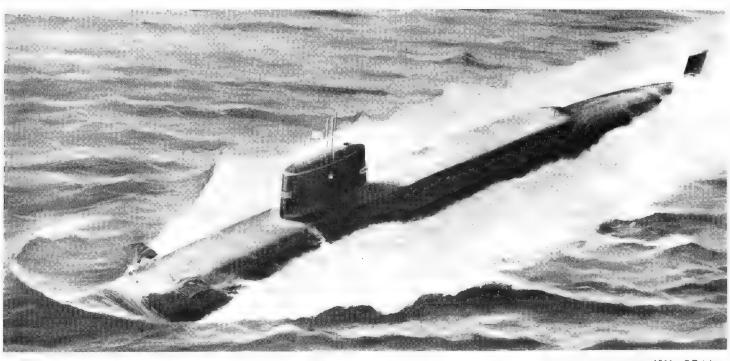
1964, but this intention was rescinded by a new Ministry of Defence on 15 Feb. 1965.

The submarines differ in several respects from United States Polaris submarines, notably in having six torpedo tubes instead of four, and modified habitability.

Each submarine, which has accommodation for 19 officers and 135 ratings, will be manned on a two-crew basis, in order to get maximum operational time at sea on the pattern of the system in the United States Polaris submarines in which two complete crews relieve each other approximately every three months.

relieve each other approximately every three months.

Cost was officially estimated to be £15,000,000 each, excluding missiles, and £70,000,000 each total.



RESOLUTION (artist's impression)

1966, Official

CHURCHILL VALIANT WARSPITE	Pennant No. S 102 S 103	Builders Vickers Ltd. Shipbuilding Group, Barrow	Ordered 21 Oct. 1965 31 Aug. 1960 12 Dec. 1962 1966	Laid down 22 Jan. 1962 10 Dec. 1963	Launched 3 Dec. 1963 25 Sep. 1965	Completed (Commissioned) 18 July 1966 —	
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Nuclear Powered Submarines

4 "Valiant" Class

Displacement:

3,500 tons standard, 4,500 tons

Dimensions:

submerged 285×33½×27 feet

Tubes: Machinery:

285×354×27 reet
6—21 inch homing
British prototype, pressurisedwater-cooled nuclear reactor.
Geared steam turbines, 1 shaft.
Speed=30 kts. (approx.)
90 (11 officers and 79 ratings)

Complement: General

General

It was announced on 31 Aug. 1960 that the contract
for a second nuclear powered submarine (Valiant) had
been awarded to Vickers-Armstrongs (Shipbuilders Ltd.),
the principal sub-contractors being Vickers-Armstrongs

(Engineers) Ltd., for the machinery and its installation, and Rolls Royce and Associates for the nuclear steam raising plant. Her hull is broadly of the same design as that of Dreadnought, but she is slightly larger. She was originally scheduled to be completed in Sep. 1965, but work was held up by the 'Polaris' programme.

The intention to order the third nuclear powered submarine (Warspite) from Vickers-Armstrongs Ltd. was announced by the Ministry of Defence on 10 Aug. 1962, and the intention to order the fourth (Churchill) on 13 Mar. 1965 and the intention to order a fifth on 4 Mar. 1966.

Engineering

It was stated that Valiant's reactor core was made in Great Britain, with machinery of British design and manufacture after the pattern of the shore prototype installed in the Admiralty Reactor Test Establishment at Dounreay. The main propulsion steam turbines and

condensers were designed and manufactured by the English Electric Company, Rugby, and the electrical propulsion machinery and control gear by Laurence, Scott & Electromotors Ltd.

Anti-Submarine Warfare

It was stated that Valiant is equipped to hunt and kill enemy submarines and surface warships, with sonar gear to detect at much greater ranges than that fitted in British conventional submarines.

Nomenclature

Nomenclature All the nam Nomenclature

All the names given to British nuclear powered submarines (except Churchill, mamed after the late Sir Winston Churchill, First Lord of the Admiralty during the early part of both World Wars, famous wartime leader, and greatest Prime Minister) are former battle-ship names of the first and second world wars. The name originally chosen for the second nuclear submarine (Vallare) was Infexible. originally chosen for t (Valiant) was Inflexible.



1966. Official

Submarines—contd.

DREADNOUGHT

Pennant No. S 101

Builders Vickers-Armstrongs, Barrow Engineers Rolls-Royce and Westinghouse

Laid down

Launched Completed 21 Oct. 1960

1963 (commissioned) 17 Apr.

I Prototype Nuclear Powered

Displacement: Dimensions:

3,000 tons standard, 3,500 tons surface, 4,000 tons submerged 265½×32½×26 feet 6—21 inch (bow). All internal Pressurised water nuclear reactor. Geared steam turbines. 1 shart Speed: 30 kts. (approx.) 88 (11 officers, 77 ratings)

Complement:

Machinery:

Complement: 88 (11 officers, 77 ratings)

General

The Royal Navy's first nuclear powered submarine, specially designed to hunt and destroy enemy underwater craft. A prominent feature of her design is her whale-shaped hull, the near-perfect streamlining giving maximum underwater efficiency, while the fin-like conning tower is also aimed at reducing 'drag' to a minimum. She is capable of continuous high underwater speed and has long endurance. Her hull is British built, but her nuclear plant was manufactured in the United States. It was announced by the Navy on 10 Aug. 1959 that the General Dynamics Corporation, U.S.A., had been awarded a contract for help in her construction. Cost: £18,455,000. awarded a co

£18,455,000. Engineering
A complete nuclear reactor for installation in Dreadnought was purchased in the United States. The General Dynamics Corporation provided design, material and technical assistance in the installation of the propulsion system. The propulsion plant itself was placed under contract to the Westinghouse Electric Corporation by Rolls-Royce acting as agents for the Royal Navy.

Photographs

A starboard quarter oblique aerial view of Dread-nought at speed appears in the 1963-64 edition, and a port broadside surface view in the 1963-64 to 1965editions.

be editions.

Manoeuvrability

This submarine manoeuvres and travels underwater with movements similar to those of an aircraft banking in flight, as she has controls like those of an aeroplane.

Official Statement
As originally planned Dreadnought was to have been fitted with a British designed and built nuclear reactor, but in 1958 an agreement was concluded with the United States Government for the purchase of a complete set of propulsion machinery of the type fitted in U.S.S. Skipjack. This agreement enabled the submarine to be launched far earlier. The supply of this machinery was made under a contract between the Westinghouse Electric Corporation and Rolls-Royce. The latter were also supplied with design and manufacturing details of the reactor and with safety information and set up a factory in this country to manufacture similar cores.

set up a factory in this country to manufacture.

Dreadnought has a hull of British design both as regards structural strength and hydrodynamic features, although the latter are based on the pioneering work of the U.S. Navy in Skipjack and Albacore. From about amidships aft, the hull lines closely resemble Skipjack to accommodate the propulsion machinery. The forward

end is wholly British in concept. In the Control Room and Attack Centre the instruments are fitted into consoles.

and Attack Centre the instruments are fitted into consoles.

Almost every electrical and mechanical part of the propulsion machinery is installed in duplicate to minimise the inconvenience of breakdowns. In addition, every control feature of the power plant and of the boat is duplicated. These innovations ensure an extremely high standard of reliability which, combined with the need to refuel at only very long intervals, give her the ability to undertake patrols of particularly long endurance at continued high underwater speeds.

Accomodation for her crew is of a standard impossible to attain in any previous submarine. The improved water distilling plant for the first time provides unlimited fresh water for shower baths and for washing machines in the fully equipped laundry. Seperate mess spaces are provided for senior and junior ratings, arranged on either side of a large galley, equipped for serving meals on the cafeteria system. Particular attention was paid to the decoration and furnishing of living quarters and to recreational facilities which include cinema equipment, an extensive library and tape recordings, features which help to offset the monotony associated with prolonged underwater voyages.

She is fitted with an inertial navigation system and with means of measuring her depth below ice.

Her primary role is as a submarine hunter killer for which purpose she is equipped with the latest developments in underwater weapons and detection.



DREADNOUGHT

1966, Wright & Logan

Patro	l Submarines	
13 "C	beron" Class	OBERG
Displacement:	1,610 tons standard, 2,030 tons surface, 2,410 tons submerged	OCELO
Dimensions:	295½ (o.a.) 241 (pp.)×26½×	ONSL/
Tubes:	8-21 inch for homing torpedoes	ONYX
Machinery:	Admiralty Standard Range diesels, Electric drive. Speed=over 15 kts. submerged (official)	OPOSS OPPOI ORAC
Complement:	68 (6 officers, 62 ratings)	ORPH
General		OTTER
		OTUS
	water speeds. They are able to	
maintain continuous su	bmerged patrols in any part of	
	lipped to fire homing torpedoes,	
Construction		
For the first time is	n British submarines plastic was	
used in the superstru	cture construction. Before and	

used in the superstructure construction. Before and abaft the bridge the superstructure is mainly of glass fibre laminate in most units of this class. The superstructure of Orpheus is of light alloy aluminium.

* The submarine of this class laid down on 27 Sep. 1962 at H.M. Dockyard as Onyx for the Royal Navy was launched on 29 Feb. 1964 as Ojibwa for the Royal Canadian Navy. She was replaced by another "Oberon" class submarine for the Royal Navy built by Cammell Laird

Photographs of Oberon and Orpheus appear in the 1961-62 and 1962-63 editions, and of Oracle in the 1963-64 and 1964-65 editions.

Builders Laid down Completed Pennant No. Launched H.M. Dockyard, Chatham
H.M. Dockyard, Chatham
Cammell Laird & Co. Ltd., Birkenhead
7 Vickers-Armstrongs Ltd., Barrow
4 H.M. Dockyard, Chatham
8 Cammell Laird & Co. Ltd., Birkenhead
16 Cammell Laird & Co. Ltd., Birkenhead
21 Scotts' Shipbding & Eng. Co. Ltd., Greenock 26 Cammell Laird & Co. Ltd., Birkenhead
26 Vickers-Armstrongs Ltd., Barrow
Vickers-Armstrongs Ltd., Barrow
Vickers-Armstrongs Ltd., Barrow
26 Scotts' Shipbding & Eng. Co. Ltd., Greenock 14 Scotts' Shipbding & Eng. Co. Ltd., Greenock 31 July May Nov. June Sep. ON 09 1959 55555 Feb. Jan. May July 1964 1962 1962 17 17 Nov. 1960 1962 31 10 Apr. Mar. 1959 1960 1PUS 8 Apr. 16 Nov. 21 Dec. 26 Oct. Aug. 24 16 23 14 26 17 1960 AUGHT 14 1959 1962 Aug. May Feb. Sep. Nov. 1964 1961 1962 1960 1966 21 Dec. 26 Oct. 26 Apr. SUM RTUNE 1964 1963 1964 1961 1959 29 Dec. 14 Feb. 25 Nov. 11 Jan. 55555 16 IEUS 1960 13 15 18 29 15 17 Jan. Aug. Oct. 26 lanv. 1962 Nov. 1962 1964 May



OPPORTUNE

1965, Wright & Logan



Patrol Submarines

8 "Porpoise" Class

Displacement: Dimensions:

1,605 tons standard, 2,030 tons surface, 2,405 tons submerged 295 $\frac{1}{4}$ (o.a.), 241 (pp.)×26 $\frac{1}{2}$ × 18 feet

Machinery.

18 feet
8—21 inch. Internal (6 bow and
2 stern) 30 torpedoes carried
2 ASR 1 turbocharged 16-cyl.
diesel generator sets 2 shafts.
B.H.P.: 3,300=12 kts surface
2 main batteries. Electric drive.
H.P.: 5,000=17 kts. submerged
71 (6 officers, 65 ratings)

Complement:

General

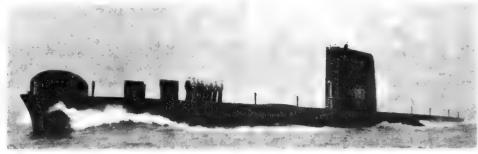
Compensate: 77 (a officers, as ratings)

General

Porpoise was the first operational submarine designed since the Second World War to be accepted into service. Able to undertake continuous submerged patrol in any part of the world. The design of hull and superstructure gives capabilities of high underwater speed and great diving depth. Stress was also laid on long endurance, both on the surface and submerged, whether on batteries or snorting. Propelled on the surface, or when snorting, by diesel-electric drive from Admiralty Standard Range diesels, and from large batteries driving the motors when submerged. The snort equipment was designed to give maximum snort-charging facilities and to operate in rough sea conditions. Both air and surface warning radar can be operated at periscope depth as well as when surfaced. The general habitability is of the highest standard, with strip lighting and air conditioning plant which provides drying and either heating or cooling of the air for arctic or tropical service: Oxygen replenishment and carbon dioxide and hydrogen eliminators make it possible to remain totally submerged without even using snort for several days. Apparatus to distil fresh water from sea water for drinking, and stowage for large quantities of stores and provisions enable the boats to remain on patrol for months without outside support. out outside support.

Submarines—contd.

	Pennant No.	Builders	Launched	Completed
CACHALOT FINWHALE GRAMPUS NARWHAL PORPOISE RORQUAL SEALION WALRUS	\$ 06 \$ 05 \$ 04 \$ 03 \$ 01 \$ 02 \$ 07 \$ 08	Scotts' Shipbuilding & Engineering Co. Ltd., Greenood Cammell Laird & Co. Ltd., Birkenhead Cammell Laird & Co. Ltd., Birkenhead Vickers-Armstrongs Ltd., Barrow-in-Furness Vickers-Armstrongs Ltd., Barrow-in-Furness Vickers-Armstrongs Ltd., Barrow-in-Furness Cammell Laird & Co. Ltd., Birkenhead Scotts' Shipbuilding & Engineering Co. Ltd., Greenood	21 July 1959 30 May 1957 25 Oct. 1957 25 Apr. 1956 5 Dec. 1956 31 Dec. 1959	1 Sep. 1959 19 Aug. 1960 19 Dec. 1958 4 May 1959 17 Apr. 1958 24 Oct. 1958 25 July 1961 10 Feb. 1961



SEALION

1966, Wright & Logan

Engineering
The propelling machinery was made by the builders except Cachalot and Walrus, by H.M. Dockyard, Electrical

The electric propulsion system in all eight was manufactured by The English Electric Co. Ltd., Rugby, and was of more advanced design than hitherto.

Photographs

Photographs
Photographs of Grampus and Porpoise appear in the
1959-60 edition, a larger photograph of Porpoise in the
1958-59 to 1960-61 editions, a photograph of Narwhal and Rorqual in the 1959-60 and 1960-61 editions,
of Cachalot in the 1960-61 and 1961-62 editions,
Finwhale in the 1961-62 and 1962-63 editions, and
Sealion in the 1962-63 to 1965-66 editions.



WALRUS

1963. Official

Disposals of "Ex" Ciass

Of the two experimental fast submarines with propelling machinery employing high test peroxide, the first submarines of post-war design to be built for the Royal Navy, Explorer, S 30, was discarded in 1963 and sold for scrap in 1965, and Excalibur, S 40, was listed for disposal by scrapping in 1965.

Disposals of "S" Class

Disposals of "S" Class Sidon, which sank after a torpedo explosion forward in Portland Harbour on 16 June 1955, but was salved a week later, was towed out of Portland Harbour and sunk off Portland on 14 June 1957 in 20 to 25 fathoms to be used by the Navy as a target on the sea bottom. Selene was discarded in 1957 and subsequently scrapped. Sleuth, Sturdy and Subtle were scrapped in 1958 and Seneschal and Scythlan in 1960. Satyr, Spiteful and Statesman were also scrapped (see Transfers), and Scorcher, Solent and Sentinel were

scheduled for scrapping in 1961 and Scotsman in 1963. scheduled for scrapping in 1961 and Scotsman in 1963. Sea Devil, the last operational submarine of this class at sea, scheduled to be scrapped in Mar. 1962, Seascout for disposal in mid-Aug. 1962, and Seraph in 1963 were towed to the shipbreakers in Dec. 1965. Sirdar, expended in experiments by the Naval Construction Research Establishment at Rosyth, was sold for scrap in 1965.

Transfers of "S" Class

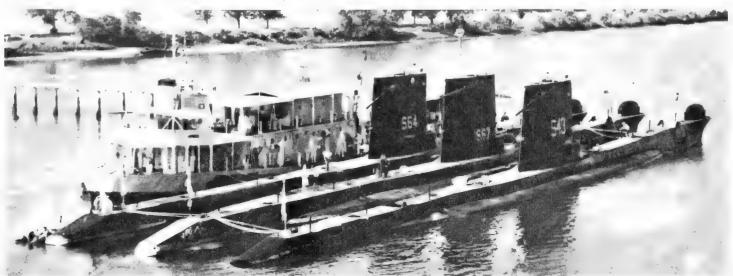
Transfers of "S" Class
Saga, Spearhead and Spur were sold to the Portuguese
Navy in 1948 and renamed Nautilo, Neptune and Narval,
respectively. Satyr, Spiteful, Sportsman (lost 23 Sep.
1962 under the French name Sibylle) and Statesman
were transferred to the French Navy, Oct.
1951 to
July 1952; but Spiteful (on loan under the name
Sirene) was returned to the Royal Navy on 24 Oct.
1958 and towed from Portsmouth to be scrapped on
9 July 1963; Statesman on loan under the name
Sultane) was returned on 5 Nov. 1959 and scrapped

in 1960; and Satyr (on loan under the name Saphir) was returned in Aug. 1961 to await disposal at Rosyth in 1962. Sanguine and Springer were sold to Israel in Oct. 1958. Springer was handed over to the Israel Navy at Portsmouth on 9 Oct. and remamed Tanin (Crocodile) and delivered to Israel in Dec. 1959. Sanguine, renamed Rahar, was delivered to Israel in May 1960.

May 1960.

The following units were cancelled at the end of the Second World War: Sea Robin, Sprightly, Surface, Surge. Second World War Iosses: Sahib, Saracen, Sickle, Simoon, Stonehenge, Stratagem, Syrtis, Splendid, P 222.

Disposals of Midget Type
The three "Midget" Type (X-craft), namely Minnow
(X 54), Shrimp (X52) and Sprat (X53), were on the
disposal list in 1961. Sister Stickleback (X 51) was
sold to Sweden on 15 July 1958 and renamed Spiggen
(Swedish equivalent of "Stickleback"),



MEDWAY (see page 307) former Support Ship now relieved by FORTH, with ANCHORITE, ALLIANCE, AMPHION (see next page)

Patrol Submarines

14 "A" Class

"A" Class

1,120 tons standard, 1,385 tons surface, 1,620 tons submerged 221 (pp.), 283 (o.a.)×22½×17 feet
Removed (see Gunnery)
6—21 inch (4 bow and 2 stern), all internal. 16 torpedoes carried (external torpedo tubes removed) see Torpedo notes
8 cyl. diesel B.H.P.: 4,300=19 kts. surface; Electric motors: H.P.: 1,250=8 kts. submerged
159 tons
60 to 68 (5 officers, 63 ratings) Displacement: Dimensions: Guns: Tubes: Machinery:

Oil fuel: Complement:

General

General
These submarines were originally designed for service in the Pacific, and had a different hull form from the "T" class, Construction was entirely welded. All have "Snort" breathing equipment Alliance and Ambush, so fitted, remained submerged for record periods in 1947-48. On 15 June 1953, Andrew completed a 2.500 sea miles underwater voyage from Bermuda to the English Channel in 15 days, a record for "snorting" in the Royal Navy.

Royal Navy.

Gunnery
Some boats of this class had the 4-inch guns removed before reconstruction. Others mounted the 4-inch gun temporarily after reconstruction. Alderney and others are fitted with a mounting for a gun. Aeneas had a 4-inch gun mounted in Feb. 1960. Artemis mounted a 4-inch gun in 1960, after reconstruction. Aurochs was the only one in service in 1964 still mounting a gun before the bridge.

Conversion.

The "A" class were rebuilt and streamlined with an enclosed fin coming tower 26½ feet high. Artful was the first to undergo reconstruction in 1955 followed by the remainder of this class except Aurochs, the only one not converted.

Torpedo Tubes
Originally mounted 10—21 inch (4 external) as designed, and carried 20 torpedoes (or 22 mines). External tubes (two bow and two stern) were removed.

ternal tubes (two bow and two stern) were removed. Photographs

An aerial bow view of Artful appears in the 1958-59 and 1959-60 edition, a photograph of Acheron (before reconstruction) in the 1957-58 edition, of Anchorite (before reconstruction) in the 1957-58 and earlier editions, of Artemis (after reconstruction) without gun in the 1959-60 edition and with gun in the 1960-61 and 1961-62 editions, of Alaric (before reconstruction) in the 1958-59 to 1961-62 editions, of Astute (as converted) in the 1958-59 to 1962-63 editions, of Artful (after second reconstruction) in the 1959-60 to 1962-63 editions, of Alaric (after reconstruction) in the 1959-60 to 1962-63 editions, of Alaric (after reconstruction) in the 1962-63 edition, a port bow oblique aerial view of Aeneas in the 1963-64 and 1965-66 editions and a starboard bow oblique aerial view of Alderney in the 1963-64 to 1965-66 editions. editions.

Class

Class
The following 30 unit; were cancelled, though some har actully been launched. Abalard, Acasta, Ace, Achates, Adept, Admirable, Adversary, Agate, Aggressor, Aglle, Aladdin, Alcestis, Andromache, Answer, Antaeus, Antagonist, Anzac, Aphrodite, Approach, Arcadian, Argent, Argosy, Asgard, Asperity, Assurance, Astarte, Atlantis, Austere, Awake, Aztec.

Loss

Affroy was lost in the English Channel on 17 Apr. 1951.

Nomenclature

Amphion was originally to have been named Anchorite and Anchorite was originally to have been named Amphion.

Pennant Notes

rennant Notes

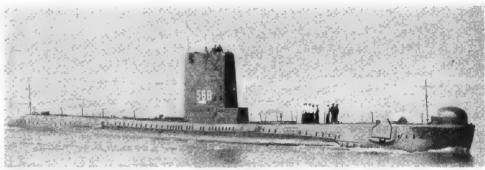
The pennant rumbers of most of the "A" class submarines (and all "O" class submarines) were changed on 1 May 1961 (see Note at the head of the pennant list on page 318)

Disbosal

Aurochs, the only one of the class not converted, was scheduled for disposal by scrapping in Sep. 1965, and towed away from Portsmouth to the shipbreakers on 9 May 1966.

Submarines—contd.

	No.	Builders	Laid do	wn	Launched		Co	mplete	d
ACHERON	S 61	H.M. Dockyard, Chatham	26 Aug.	1944	25 Mar.	1947	17	Apr.	1948
AENEAS	S 72	Cammell Laird & Co. Ltd., Birkenhead	10 Oct.	1944	25 Oct.	1945	31	July	1946
ALARIC	S 41	Cammell Laird & Co. Ltd., Birkenhead	31 May	1944	18 Feb.	1946	11	Dec.	1946
ALCIDE	\$ 65	Vickers-Armstrongs Ltd., Barrow-in-Furness	2 Jan.	1945	12 Apr.	1945	18	Oct.	1946
ALDERNEY	S 66	Vickers-Armstrongs Ltd., Barrow-in-Furness	6 Feb.	1945	25 June	1945	10	Dec.	1945
ALLIANCE	S 67	Vickers-Armstrongs Ltd., Barrow-in-Furness	13 Mar.	1945	28 July	1945	14	May	1947
AMBUSH	5 68	Vickers-Armstrongs Ltd., Barrow-in-Furness	17 May	1945	24 Sep.	1945	22	July	1947
AMPHION	S 43	Vickers-Armstrongs Ltd., Barrow-in-Furness	14 Nov.	1943	31 Aug.	1944	27	Mar.	1945
ANCHORITE		Vickers-Armstrongs Ltd., Barrow-in-Furness	19 July	1945	22 lan.	1946	18	Nov.	1947
ANDREW	5 63		13 Aug.	1945	6 Apr.	1946	16	Mar.	1948
ARTEMIS	5 49		28 Feb.	1944	26 Aug.	1946	15	Aug.	1947
ARTFUL	5 96		8 June	1944	22 May	1947	23	Feb.	1948
ASTUTE	\$ 47		4 Apr.	1944	30 lan.	1945	30	June	1945
AURIGA		Vickers-Armstrongs Ltd., Barrow-in-Furness	7 June	1944	29 Mar.	1945	12	Jan.	1946



ALDERNEY

1966, courtesy Dr., Giorio Arra



ALLIANCE

1965, Wright & Logan



ACHERON

1964, Official



ARTEMIS (without gun)

1962, Wright & Logan



Patrol Submarines

8 "T" Class

Displacement:

Talent, Token: 1,090 tons standard, 1,231 tons surface, 1,571 tons submerged Tacitum, Thermopylae: 1,280 tons standard, 1,505 tons surface, 1,700 tons submerged Tabard, Tiptoe, Trump, Truncheon, 1,310 tons standard, 1,535 tons surface, 1,740 tons submerged Talent, Token: 265 (pp.), 273 (o.a.)×26½×14½ feet: Thermopolyae: 285½ (o.a.); Tabard, Tiptoe, Trump, Truncheon: 293½ (o.a.) (a.a.); Tabard, Tiptoe, Trump, Truncheon: 293½ (o.a.) (a.a.); Tabard, Tiptoe, Trump, Truncheon: 293½ (o.a.) (a.a.); Tabard, Tiptoe, Trump, Truncheon: 293½ (o.a.) (a.a.) (a.a.); Tuptoe, Trump, Truncheon: 293½ (o.a.) (a.a.); Tabard, Tiptoe, Trump, Truncheon: 293½ (o.a.) (a.a.); Tabard, Tiptoe, Trump, Truncheon: 293½ (o.a.) (a.a.); Tabard, Truncheon (a.a.); Tabard, Truncheon, Truncheo

Dimensions:

Guns:

Machinery:

Oil fuel:

Complement:

General
Officially described originally as "Patrol" type submarines for general service. Of saddle-tank design, they originally had an endurance equal to a 42-day patrol.
All were subsequently fitted with "Snort" equipment. Eight of the surviving boats of this class were fully converted and rebuilt into the most advanced operational submarines, From them were developed the new "Porpoise" and "Oberon" classes.
Reconstruction
Rebuilding of the eight boats of the "conversion"

poise" and "Oberon" classes. Reconstruction
Rebuilding of the eight boats of the "conversion" type in 1951-56 was drastic. The pressure hull was severed at the engine-room section, the two halves moved apart and a new section built in. The extra space accommodated a second pair of electric motors, clutches between which and the original motors made diesel-electric drive possible, and a fourth battery section was added to give a submerged speed of 15 knots. All guns and external torpedo tubes were removed. Improved periscopes, asdic and radar were installed with a periscopic snort mast. Tabard and Trump had the bridge built into the huge fin, which housed two periscopes, two radar masts, two snort masts, and an aerial. In the other six the bridge was reduced to a tiny cramped cab before the fin.

two radar masts, two snort masts, and an aerial. In the other six the bridge was reduced to a tiny cramped cab before the fin.

Alteration of the five boats of the "modernised" type in 1955-60 was less radical. They were streamlined with the formerly prominent periscope standards and aerials enclosed in a coming tower "fin" or "sail" which also contained the bridge. All guns and external torpedo tubes and all possible obstructions were removed, and the resulting streamlining improved their speed without an increase in engine power. They were also much more silent under water and could use their improved asdics with enhanced efficiency. For specific operations a gun could be quickly inserted in this class.

There is a considerable difference between the super "T" class "Conversions" (Tabard, Tiptoe, Trump, Truncheon) which have welded pressure hulls and had an additional section of about 20 feet built into them (Taciturn was lengthened by 14 feet, and Thermopylae, by 12 feet), and the "T" class "Streamlines" (Talent, Token) which are riveted hulled boats and therefore did not undergo the full conversion. Underwater speed of Thermopylae conversion types (after reconstruction, streamlined hull, more motors, greater batteries) is 15 knots and Taciturn is reported to have developed more than twice her previous maximum underwater speed.

Torpedo Tubes
Originally mounted 11—21 inch (3 external) as de-

Torpedo Tubes
Originally mounted 11—21 inch (3 external) as designed, External tubes removed.

Abbearance

Appearance Talent and Token were modernised and streamlined. Tabard, Taciturn, Thermopylae, Tiptoe, Trump and Truncheon were rebuilt. Talent, as well as being streamlined, had a gun (old 4 inch remodelled) with no shield, now removed.

The appearance of submarines, with or without guns, etc., is liable to change frequently and quickly according to operational and experimental requirements.

Submarines—contd.

	No.	Builders	Laid dov	vn	Launched	Completed		
TABARD		Scotts S.B. & Eng. Co., Greenock	6 Sep.	1944	21 Nov. 1945	25 June 1946		
TACITURN		Vickers-Armstrongs Ltd., Barrow	9 Mar.	1943	7 june 1944	7 Oct. 1944		
TALENT	\$ 37	Vickers-Armstrongs Ltd., Barrow	21 Mar.	1944	13 Feb. 1945	26 July 1945		
THERMOPYLAE		H.M Dockyard, Chatham	26 Oct.	1943	27 June 1945	5 Dec. 1945		
TIPTOE		Vickers-Armstrongs Ltd., Barrow	10 Nov.	1942	25 Feb. 1944	13 June 1944		
TOKEN		H.M. Dockyard, Portsmouth	6 Nov.	1941	19 Mar. 1943	15 Dec. 1945		
TRUMP		Vickers-Armstrongs Ltd., Barrow	31 Dec.	1942	25 Mar. 1944	9 July 1944		
TRUNCHEON		H.M. Dockyard, Devonport	5 Nov.		22 Feb. 1944	25 May 1945		



THERMOPYLAE

1965, A. & J. Pavia



TALENT

1965, Giorgio Arra



TIPTOF

1963. Captain Aldo Fraccaroli



TRUMP

Photographs Photographs appear of Tabard in the 1961-62 and 1962-63 editions, and of Truncheon in the 1963-64 edition.

edition.
Second World War losses:
Talisman, Tempest, Thorn, Thunderbolt, (ex-Thetis),
Tlgals, Tarpon, Traveller, Trooper, Tetrach, Thistle,
Triad, Triton, Triumph, Turbulent, P 311. Cancelled:
Talent (1) (P 343), Theban, Thor, Threat, Tlara.

Nomenclature

Talent was originally to have been named Tasman.

Transfers

Transfers
Talent (renamed Zwaardvis) and Tarn (renamed Tijgerhaal) were transferred to the Royal Netherlands Navy. Two lent to the Royal Netherlands Navy in June 1948 were returned to the Royal Navy in 1953, Tapir (Netherlands name Zeehond) on July 16 and Taurus (Netherlands name Dolfijn) on Dec. 8. Totem and Turpin (converted boats) were transferred to the Israeli Navy in 1965 and renamed Dakar (Shark) and Leviathan (Whale), respectively.

1963, Wrigh t & Logan

Class

Class Talent was swept out of dry dock in H.M. Dockyard, Chatham, on 15 Dec. 1954 when a caisson collapsed; she was subsequently streamlined with an enclosed conning tower fin which was damaged in collision, while submerged off the Isle of Wight, with an unknown merchant ship, on 8 May 1956.

merchant ship, on 8 May 1730.

Disposals

Truculent sank after collision in the Thames Estuary on 12 Jan. 1950, was salvaged on 14 Mar., but was scrapped on 5 Apr. 1950. Tantalus, Tantivy and Templar were discarded in 1950. Tradewind was scrapped 1956. Taurus and Thorough were approved to be scrapped in 1958 when they awaited tow to the shipbreakers or disposal otherwise as targets. Telemachus was scrapped in 1960 and Tresposser was de-equipped for scrapping in 1961. Thule (damaged in collision in 1960) was for disposal in 1962. Tactician, Trenchant and Tudor were awaiting disposal in 1963. Tally Ho (latterly harbour training), Tapir and Tireless ("Streamlines") were on the disposal list in 1964. Teredo ("Streamline") was sold for scrap in 1965.



ASSAULT SHIPS

FEARLESS INTREPID Pennant No. L 10 (ex-L 3004) L 11 (ex-L 3005)

Builders Harland & Wolff, Ltd., Belfast John Brown & Co., (Clydebank) Ltd.

Ordered Dec. 1961 May 1962 Laid down 25 July 1962 Late 1962

Launched 19 Dec. 1963 25 June 1964

Completion Dec. 1965 Feb. 1967

2 Amphibious Warfare Type

11,060 tons standard, 12,120 tons full load, 16,950 tons Displacement:

Dimensions:

11,060 tons standard, 12,120 tons full load, 16,950 tons ballasted Length: 500 (w.l.), 520 (o.a.). Beam: 80 feet. Draught 20½ feet (32 aft, 23 forward, 27½ mean feet ballasted) Flight deck facilities for 4 Wessex helicopters (6 operable) 4 LCM (9)s in dock: 4 LCVPs at daylis Aircraft: Landing craft:

Guided weapons:

4 LCM (9)s in dock: 4 LCVPs at davits
4 "Seacat" close-range antiaircraft systems
2—40 mm. Bofors AA
2 steam turbines. 2 shafts.
S.H.P.: 22,000—20 kts.
2 Babcock & Wilcox
Specimen Load: 15 tanks, 7 three-tonners and 20
1-tonner trucks (20 three-tonners on Flight Deck)
380 at ship's company standards,
700 overload Guns-Machinery: Boilers:

Vehicles:

Troops:

700 overload 556 (36 officers and 520 ratings), 111 Royal Marines and Complement:



FEARLESS

1966, Officia;

General
Assault ships of a new design, which, with commando carriers, replace the former ships of the Amphibious Warfare Squardron. They carry landing craft which can be floated through the open stern by flooding compartments of the ship and lowering her in the water. They are able to deploy tanks, vehicles and men. They have seakeeping qualities much superior to those of former tank landing ships, and their speed and range is greater. They are also able to serve as Command Ships at sea for transit operations and as Headquarters Ships in the assault area. Another valuable feature is a helicopter platform which is also the deckhead of the covered well or dock from which the landing craft are floated out. The vessels have a new type of hull combining features of both an escort aircraft carrier and a troop transport with the basic lines of a dock landing ship. Officially estimated building cost of Fearless is £11,250,000.

Engineering
From the photograph it will be seen that the funnels are staggered across the beam of the ship, indicating that the engines and boilers are arranged en echelon, two machinery spaces having one turbine and one boiler installed in each space, the port shaft being longer that the starboard. The main machinery is arranged in two self contained units, each driving one shaft, The steam turbines were manufactured by the English Electric Co. Rugby, the main gearing by David Brown & Co., Huddersfield. Boilers work at a pressure of 550 lbs. per sq. in, and a temperature of 850 deg. F.

Official Statement

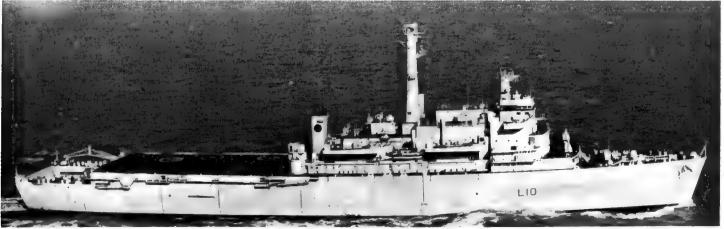
Official Statement
Each ship is fitted out as a Naval Assault Group/
Brigade Headquarters Ship with an Assault Operations
Room from which Naval and Military personnel,
working in close co-operation, can mount and control
the progress of an assault operation. Each ship is
equipped with latest radio aids so that the Admiralty
Board can send teleprinter messages to the ship wherever she may be operating. Her H.F, transmitters erable
her to communicate with Commonwealth or Allied
receiving stations and she is also able to maintain
contact with other ships, aircraft, military authorities
and associated landing craft which may be operating
with her, She operates with a Royal Marine Commando or infantry battalion.
In the 1966-67 Defence Estimates these assault
ships are listed after aircraft carriers and commando
ships and before cruisers and destroyers.

ships and before cruisers and destroyers.



FEARLESS

1966, Official



1966, Official

Conversion

Conversion
Early n 1965 Blake was taken in hand for conversion into a helicopter carrier at H.M. Dockyard, Portsmouth, expected to take about two years. The reconstruction involves the suppression of the after 6 inch turret and the provision of a flight deck and hangar foroperating a flight of four Wessex helicopters (see illustration below). Lion was taken in hand for conversion at H.M. Dockyard, Devonport, early in 1966, and Tiger will be similarly converted in due course.

3 "Tiger" Class

Displacement: Dimensions:

Guns:

Armour; Machinery:

9,550 tons standard (12,080 tons full load)
Length: 538 (pp.) 550 (w.l.)
555½ (o.a.) feet, Beam 64 feet, Draught: 21½ feet
Blake, Llon, 2—6 inch (1 twin), Tiger 4—6 inch (2 twin); 6—3 inch (3 twin)
3½" to 3½" belt, 3" to 1" turrets, 2" deck
4 Parsons geared turbines, 4 shafts, 5.H.P.: 80,000=31-5 kts, 4 Admiralty 3-drum type 1,850 tons
2,100 miles at full power, 4,000 Boilers: Oil fuel: Radius:

2,100 miles at full power, 4,000 at 20 kts., 6,500 at 13 kts.
716 (52 officers, 664 ratings) Complement:

Designed to provide close cover and anti-aircraft sup Designed to provide close cover and anti-aircraft support for convoys, aircraft carrier groups and assault landings. They have versatility in other roles including military and policing duties in any part of the world. They exceeded their originally designed displacement of 8,000 tons. Work on them was stopped in July 1946, for eight years. The decision to complete them was announced on 15 Oct. 1954, and they were dismattled ready for resumption to a new design in 1955. Tiger cost £13,113,000, Llon £14,375,000 and Blake £14.940.000.

manted ready for resulption to a new design in 135. Tiger cost £13,113,000, Lion £14,375,000 and Blake £14,940,000.

Gunnery
As originally designed guns included nime 6 inch, ten 4 inch and 16 smaller. The ships carry fully automatic guns of advanced design. The 6 inch guns are equally effective in surface and anti-aircraft roles. The rate of fire is twenty rounds per minute, more than twice that of any previous cruiser. The 3 inch guns are capable of 120 rounds per minute, comparable with light anti-aircraft guns of the Second World War. The guns are fitted with a comprehensive direction system which enables all turrets to be controlled by radar. Each Mk. 26 6 inch turret weighs 163 tons and each Mk. 6 3 inch turret 38½ tons. Tiger has small radar aerials on top of each 3 inch gunhouse.

operational
Ships are controlled from a totally enclosed bridge the first fitted in British cruisers. A 200-line automatic telephone exchange facilitates internal communications.

Engineering
The main machinery is largely automatic and can be remotely controlled. Steam conditions at 400 lbs. per sq. in. working pressure and 640 deg. Fahrenheit superheat. Propellers 285 revolutions per minute.

Four turbo-generators provide over 4,000 kilowatts of alternating current, the first time this type of power was used in British cruisers.

Originally designed to have eight 21-inch torpedo bes in two quadruple mountings. tubes

tubes in two quadrupie mountings.

Habitability

Complete air-conditioning is installed, Generous electrical equipment is provided for all domestic and recreational purposes. Accommodation is of a much higher standard than in previous cruisers.

Photographs
A starboard quarter oblique aerial view of Lion
appears in the 1962-63 to 1964-65 editions, a starboard broadside view in the 1960-61 and 1961-62
editions, and a dead overhead aerial view of Tiger in
the 1960-61 edition.
Nomenclature
The name of Defence was changed to Lion in 1957
(announced 8 Oct. 1957).
Class Photographs

Class Hawke of this class, laid down at H.M. Dockyard, Portsmouth in Aug. 1944, was cancelled in 1946, as was Bellerophon (ex-Tiger) a cruiser of enlarged design ordered from Vickers-Armstrongs.

Drawing
Port elevation and plan of Tiger, Scale, 128 feet =1 inch.

CRUISERS

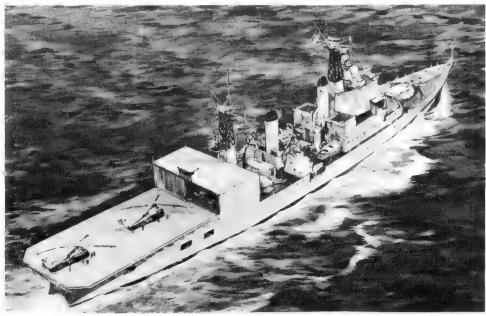
Completed **Builders** and Engineers Laid down Launched

BLAKE (ex-Tiger, ex-Blake) C 99 Fairfield S.B. & Eng. Co. Ltd., Govan LION (ex-Defence) C 34 Scotts' S.B. & Eng. Co. Ltd., Greenock* TIGER (ex-Bellerophon) C 20 John Brown & Co. Ltd., Clydebank 17 Aug. 42 20 Dec. 45 8 Mar. 61 24 June 42 2 Sep. 44 20 July 60 1 Oct. 41 25 Oct. 45 18 Mar. 59



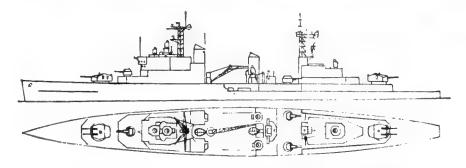
LION

1965. Wright & Logan



BLAKE (artist's impression as helicopter carrier)

1964, Official



Disposals of older Cruisers
Of the "Colony" class, Jamaica was scrapped in 1960
Kenya in 1962, Bermuda and Mauritius in 1965, and
Gambia is to be scrapped in the near future.
Of this class, Nigeria was sold to the Indian Navy in
1954 and renamed Mysore. Two others, Fiji and Trinidad, were lost in action during the Second World War.

Of the "Ceylon" class, Newfoundland was transferred to the Peruvian Navy at Portsmouth on 30 Dec. 1959 and renamed Almirante Grau, and Ceylon was transferred to the Peruvian Navy at Portsmouth on 9 Feb. 1960 and renamed Coronel Bolognesi.

Of later cruisers, Superb was scrapped in 1961, and Swiftsure in Oct. 1962.



Completed

3 Aug. 1939

Lounched

17 Mar. 1938

Cruisers—contd.

Pennant No. C 35 BELFAST Harland 11,550 tons standard (14,930 tons full load)
Length: 579 (pp.), 606 (w.l.),
613½ (o.a.) feet. Beam: 69 feet.
Draught: 23 feet
12—6 inch, 8—4 inch AA.,
8—40 mm. AA,
Removed see (Torpedoes)
5" to 3" side, 2½" turrets, 3"
to 2" deck (see Protection)
Parsons geared turbines. 4
shafts. 5.H.P.: 80,000=32.5
kts, designed. 30 kts, sea speed.
4 Admiralty 3-drum type
2,260 tons
8,000 miles at 14 kts.
710 (52 officers, 658 men) Displacement: Dimensions: Guns: Tubes: Armour: Machinery: Boilers: Oil fuel: Radius: Complement:

Complement: 710 (52 officers, 658 men)
General
Improved "Southampton" type. The largest cruiser
in the Royal Navy. Designed displacement was 10,000
tons with beam of 63½ feet, since increased. Built
under the 1936 Navy Estimates. Internal subdivision
is exceptionally complete. Was practically rebuilt after
being heavily damaged by a mine in the early months
of the Second World War, beam being increased and
other alternations made. Refitted at Devonport early
in 1963 and placed in Reserve. Arrived at Portsmouth
on 4 May 1966 to relieve Sheffield as Headquarters
of the Commodore Reserve Ships and was reclassified
as harbour accommodation ship on 15 June.
Gunnery

Gunnery
Until her 1956-59 reconstruction the light anti-air-craft armament comprised two 8-barrelled 2 pdr and nine single 40 mm.

Torpedoes
The 6-21 inch torpedo tubes originally mounted in triple banks were removed during the 1956-59 refit.

Laid down

10 Dec. 1936

Builders

Wolff, Ltd., Belfast

First Reconstruction

When she was mined her back was broken, and in the course of repairs, to strengthen her, she was fitted with an external bulge adding approximately 3 feet to her maximum beam. This bulge roughly covered the same areas as the armour belt above the water line. Besides providing additional under-water protection, it improved the ship's stabilty, thereby enabling her to retain her entire 6-inch armament despite extra top weight having been added.

Builders

Second Reconstruction
In 1956 Belfast began her second reconstruction and modernisation. This was completed on 12 May, 1959. Extensive modifications included lattice masts, a new operations room, new type covered bridge, modernised armament and improved habitability. This reconstruction cost £5.553.000.

Drawing
Port elevation and plan. Scale: 128 feet=1 inch.

Protection

Designed to withstand 8-inch shellfire. The armour extends over the length of the citadel, and the protective deck across the ship's breadth above the magazines.

Photographs

A broadside view appears in the 1959-60 edition, a starboard broadside view before reconstruction in the 1957-58 and 1958-59 editions, a port broadside view after reconstruction in the 1959-60 to 1961-62 editions, and a port oblique aerial view in the 1962-63 edition.

Sister Edinburgh was lost in action on 2 May 1942.



1963, Wright & Logan

25 Aug. 1937

SHEFFIELD

Displacement:

Dimensions:

Pennant No. C 24

9,100 tons standard (12,400 tons full load)
Length: 558 (pp.), 584 (w.l.), 591½ (o.o.) feet, Beam: 61¾ (w.l.), 64 (o.o.) feet, Draught: 21 feet

Tubes:

(W.I.), 64 (o.d.) reet, Draugnt: 21 feet 9—6 inch, 8—4 Inch AA., 18— 40 mm, AA. 6—21 inch (tripled) 4½" to 3" side, 2" to 1" turrets, 2" deck. Machinery:

2" deck.
Parsons geared turbines. 4 shafts.
S.H.P.: 75,000=32.5 kts. (de-S.H.P.: signed)

signed)
4 Admiralty 3-drum type
1,970 tons
7.000 miles at 14 kts.
706 to 717 Boilers: Oil fuel: Radius: Complement: General

The last survivor of the eight handsome cruisers of e "Southampton" class. Built under the 1934 Navy

31 Jan. 1935 Vickers-Armstrongs Ltd., Tyne Estimates. Ordered on 17 Dec. 1934. Protection was estimates. Ordered on 17 Dec. 1754. Protection was somewhat better than in previous classes, Special ventilating trunks were installed, with openings on either side of the hull at the break of the deck level abreast "B" turret. In 1959-60 she was refitted and put in a state of preservation in operational reserve at Portsmouth and living ship. On the Disposal List in 1966.

Gunnery At end of the Second World War "X" triple 6-inch At end or the second World War "A" triple 6-inch turret was removed and replaced by 40 mm. anti-air-craft guns. The centre gun of each 6 inch turret is mounted slightly farther back than other two. Each turret weighs 135 tons. Each gun weighs 7 tons. Shell fired, weighs 1 cwt. 4 inch directors abreast forefunnel. Reconstruction

Reconstruction
Reconstructed and modernised, modifications including new bridge structure rebuilt with revised armament arrangements and air conditioning, new lattice foremast, but tripod mainmast retained. She underwent a long refit in 1949-51 and was again extensively modified June 1956-June 1957.

Anti-Radiation

Anti-Radiation

The ship was fitted with modern devices to fight in areas of atomic radiation. Her bridge was enclosed and she was fitted with powerful pre-wetting systems. Engineering
Engineed by Vickers-Armstrong Ltd., Barrow Each propeller weighs 5½ tons.
Appearance
Larger than "Tiger" class, with raked funnels and former hangar structure. Lattice foremast and tripod mainmast.

Launched 23 July 1936

former nargar structure. Lattice foremast and tripod mainmast.

Drawing

A plan and elevation drawing appears in the 1959-60 edition. Also see silhouette drawing of Sheffield on page 270 of this edition.

Class

Class
Sister ships Gloucester, Manchester and Southampton were lost during the Second World War. Disposals

Sister ships Glasgow and Liverpool were scrapped in 1958, Newcastle in 1959 and Birmingham in 1960.



GUIDED MISSILE ARMED DESTROYERS

4 New Construction Type 82

5,650 tons standard (approx), 6,750 tons full load (estimated) Displacement:

6,750 tons 7ul load (estimated) (estimated)
523 (w.l.), 540 (o.a.)×55×17 (mcon), 22½ (max.) feet (estimated unofficial figures)
1.4-5 inch; 2.40 mm. AA.; Dimensions:

Guns:

4 saluting
1 twin launcher aft for "Seadart" medium range surface-to-Guided weapons:

air guided missiles
1 single launcher for'd for
"Ikara" rocket propelled long A/S weapons: range anti-submarine weapon system delivering homing tor-pedoes "Limbo" three-barrelled depth

"Limbo" three-barrelled depth charge mortar aft Facilities for 1 light helicopter 2 sets standard range steam geared turbines S.H.P. 30,000 2 Bristol Siddeley "Olympus" gas turbines. S.H.P.: 44,600 2 shafts. Total S.H.P.: 74,600 Aircraft: Machinery:

=32 kts

Boilers: £20,000,000 each (unofficial Cost:

estimate) 433 (33 officers and 400 ratings Complement: approx. Maximum unofficial estimate. accommodation for

450.

General

Originally intended to be enlarged versions of the general purpose frigates of the "Leander" class as vehicles for the new "Seadart" guided weapons system, but the design turned out larger than that of the guided missile armed destroyes of the "County" class, and they have been officially referred to as escort cruisers.

Official Statement, 23 Feb. 1966

Type 82 Guided Missile Destroyers are expected to be ordered for the Royal Navy later this year.

The ships will be about 5,650 tons, slightly larger than the present "County" class guided missile destroyers, and have been designed around a powerful new weapons system. They will have a hull capable of sea-keeping and high speeds in all weathers. They will be fully stabilised to present a steady weapon platform, and will have a sleek, modern appearance. Machinery for the new destroyers will be a combination of steam and gas turbines already successfully introduced in the "County" class guided missile destroyers and in the "Triball" class general puropse frigates, but with the new development of Bristol Siddeley marine Olympus gas turbines to provide emergency power and high speed boost. This machinery will be operated remotely from a ship control centre. The ships will have automatic steering, obviating the need for a quartermaster.

The ships will have automatic steering, obviating the need for a quartermaster.

In addition to the automatic steering, ships of the new class will have many other labour-saving items of equipment fitted to make the most efficient and economical use of manpower. As a result they will have a smaller ship's company for their tonnage than any other previous warship.

Living conditions will be the highest obtainable in a warship, with full air-conditioning, modern electric galleys, multi-choice cafeteria messing, television and individual bumk sleeping in comfortable mess-decks.

The whole ship will be capable of steaming and fighting without discomfort to its complement when shut-down against nuclear fall-out.

Type 82 Destroyers will be fitted with an Action Data Automation Weapon System which will compute the information from the new 3D radar and other censors, and control their various weapons to engage the targets selected.

Development of this radar has been the direct result

the targets selected.

Development of this radar has been the direct result of close Anglo-Netherlands Research and Development collaboration between the two Navies. The equipment is being developed and manufactured in Holland, but will contain a number of components of British, French and Italian design and manufacture.

Type 82 ships will also be fitted with the latest Sonar system to provide the long-range information required for the Seadart and Ikara weapons,

The Seadart ship missile system has been developed to meet the air threat of th 1970's and 1980's. It also has a reasonable antiship capability, Its main advantages over the Seaslug system fitted in the "Country" Class guided missile destroyers are:

1. Considerably improved surface-to-air performance, particularly at very high and very low levels.

2. Quicker reaction time

3. Considerably improved target handling capacity,

4. It is lighter and takes up less space,

As Seadart meets a NATO military requirement and can be fitted in small ships it is hoped that foreign sales will result from the decision to go ahead with this programme.

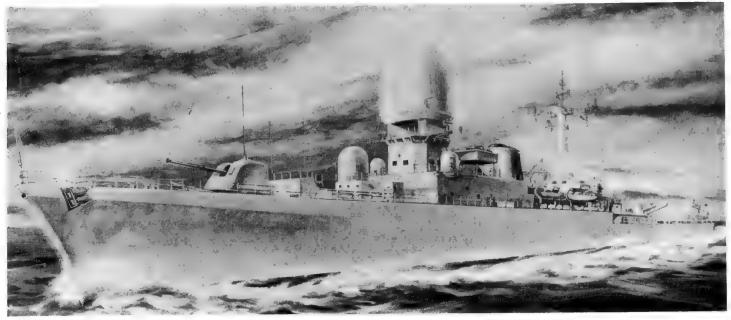
can be fitted in small ships it is hoped that foreign sales will result from the decision to go ahead with this programme.

Ikara is a long-range anti-submarine weapon system developed in Australia and is designed to be able to deliver homing torpedoes to a position where they can attack submarine targets.

Ikara is propelled by a rocket motor providing the missile with its long-range capability. The air-frame, rocket motor, guidance and tracking system are being developed by the Australian Department of Supply in Australia, and the British-developed ADA system will be used in the R.N. version with a launching and handling system which is being developed under contract in the U.K.

The Ikara all-weather, rapid-reaction system has considerable accuracy which will greatly enhance the submarine-killing potential of the Fleet. It is a logical development from the original Australian system so that the United Kingdom's reseach and development cost will be very much less than that normally associated with new guided weapon systems.

The Austalian Navy have already got the Australian version of the Ikara at sea in Fleet escorts.



NEW GUIDED MISSILE ARMED DESTROYER, TYPE 82

1966, Official



8 "County" Class

5,200 tons standard (6,200 tons Displacement: full load)
505 (w.l.), 520½ (o.a.) ×54×
20 (max.) feet
4-4+5 inch (two twin turrets forward); 2-20 mm. (single); Dimensions: Guns:

Guided weapons:

forward); 2—20 mm. (single); 4 saluting 1 twin launcher aft for "Seaslug long range ship-to-air missiles 2 quadruple launchers abaft after funnel for "Seacat" close range ship-to-air missiles 1 Westand Wessey helicopter

ship-to-air missiles

1 Westland Wessex helicopter

2 sets geared steam turbines,
boosted by 4 gas turbines, 2
shafts, S.H.P.: 60,000=32.5 kts.
(see Engineering notes below)

2 Babcock & Wilcox

440 (33 officers, 407 ratings) Aircraft: Machinery:

Boilers: Complement:

Complement: 440 (33 officers, 407 ratings)

General

Devonshire and Hampshire, designed to embody the newest developments in the destroyer field, were projected under the 1955-56 Navy Estimates, and it was later found possible to arm them with guided weapons instead of anti-aircraft guns, and also to carry modern anti-submarine, radar and communication equipment. Kent and London of this super-destroyer type were provided under the 1956-57 Navy Estimates. They have powerful armament, and endurance giving them a considerable capacity for operating independently. Fife and Glamorgan were ordered under the 1961-62 Navy Estimates. All six ships are fitted with stabilisers. Two more ships of the class, Antrim and Norfolk, were ordered under the 1964-65 Navy Estimates. Torbedoes

The helicopter carries a new type of homing torpedo to combat submarines.

Anti-Submarine

In addition to anti-submarine torpedogs and an anti-submarine helicopter, the ships are fitted with the latest underwater detection equipment for anti-submarine work

work.

Operational

Ships of this class have three main roles:— 1. Escort duties with a task group, including the ability to provide guided weapon anti-aircraft defence for the group and to augment its anti-submarine capability; 2. Operations as part of a tasl unit of light forces with the ability to bombard in support of land forces and to attack light forces with gunfire; 3. Police duties in peace-time in any part of the world.

The ships are designed to operate in "fall out" areas. As many deck installations are under cover the vessels have clean lines, and this facilitates "washing down" in the event of attack by nuclear weapons.

the event of attack by nuclear weapons.

the event of attack by nuclear weapons.

Gunnery

The 4—4-5 inch guns are radar controlled, fully automatic dual-purpose quick-firing weapons for attack and defence against ships and aircraft.

Engineering

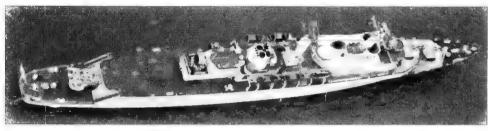
These are the first vessels of their size to have COSAG (combined steam and gas turbine) machinery of exceptionally compact and light design, enabling the amount of fighting equipment to be increased. Boilers work at a pressure of 700 lbs, per sq. in. and a temperature of 950 deg. F. The steam and gas turbines are geared to the same shaft. Each shaft set consists of a high pressure and low pressure steam turbine of 15,000 S.H.P. combined output plus two G.6 gas turbines each

Guided Missile Armed Destroyers-contd.

	No.	Builders		Laid d		1	Launch	ed	- 1	Compl	eted
ANTRIM		Fairfield S.B. & Eng. Co. Ltd., Govan		Jan.	66		_			_	
DEVONSHIRE	D 02	Cammell Laird & Co. Ltd., Birkenhead	9	Mar.	59	10	June	60	15	Nov.	62
FIFE		Fairfield S.B. & Eng. Co. Ltd., Govan	- 1	June	62	9	July	64	21	June	66
		Vickers-Armstrongs Ltd., Newcastle-on-Tyne	13	Sep.	62	9	July	64	- 1 🕈	Oct.	66
	D 06	John Brown & Co. (Clydebank) Ltd., Glasgow	26	Mar.	59	16	Mar.	61	15	Mar,	63
KENT	D 12	Harland & Wolff Ltd., Belfast	- 1	Mar	60	2.7	Sep.	61	15	Aug.	63
LONDON		Swan, Hunter & Wigham Richardson, Wallsend	26	Feb.	60	7	Dec.	61	14	Nov	63
NORFOLK	D 10	Swan, Hunter & Wigham Richardson, Wallsend		Feb.						_	



LONDON 1964. Official



KENT

1964. Official

of 7,500 S.H.P. The gas turbines provide a high concentration of compact power and are used to supplement the steam power for high speed work. They are also able to develop their full power from cold within a few minutes, providing unprecedented mobility, and enabling ships lying in harbour without steam to get under way instantly in an emergency. Helicopter

Helicopter

The landing space for the helicopter is at the after end of the upper deck where anti-submarine weapons would be normally mounted: The helicopter is the first to be fitted as a complete "hunter killer." It carries dipping sonar and homing torpedoes.

Electrical

There are two 1,000 kW, turbo-alternators and three

, were are two 1,000 kW. turbo-alternators and three gas turbine alternators, total 3,750 kW., at 440 V. A.C.

Radar
Each ship is exceptionally well equipped with the latest "watching" and "warning" radar. Habilitability
All vessels have the latest accommodation standards and are fully air-conditioned. Photographs
Photographs of Devonshire, firing a "Seaslug" guided missile appear in the 1962-63 to 1964-65 editions. Appearance
Devonshire and Hampshire are practically identical. Kent and London differ in some features, notably in the aftermast being stepped further aft. Fife and Glamorgan differ from the first two pairs. These and two later ships, Antrim and Norfolk, were designed to carry the more powerful "Seaslug" system, later to be fitted to the first four.



DEVONSHIRE

1965, Wright & Logan



DESTROYERS

8 "Daring" Class

2,800 tons standard (3,600 tons Displacement: 2,800 tons standard (3,600 tons full load)
366 (pp.), 375 (w.l.), 390 (o.a.)×43×18 (max.) feet
6—4.5 inch, in three twin turrets, two forward and one aft,
2 or 6—40 mm. Bofors AA. (See Gunnery notes below)
Decoy Diagnand Diagna Durchess: Dimensions: Guns:

Tubes:

Guided weapons:

A/S weapons: Machinery:

2 or 6—40 mm. Bofors AA. (See Gunnery notes below)
Decoy, Diamond, Diamo, Duchess:
5—21 inch, in one pentad mounting. (See Torpedo Tubes)
(See Guided Missiles)
1 Squid triple-barrelled depth charge mortar
Parsons double reduction geared turbines. English Electric design in Yarrow ships. 2 shafts. S.H.P.:
54,000=34·75 kts. (designed),
2 Foster-Wheeler in Dainty,
Defender, Diamond and Duchess
2 Babcock & Wilcox in Daring,
Decoy, Delight and Diana
580 tons
1,700 miles at full power, 4,400 miles at 20 kts.
278 to 297 (Leaders 308) Boilers:

Oil fuel:

Complement:

General

These destroyers can perform a number of roles including cruiser reconnaissance, and anti-submarine or anti-ship patrol. All are fitted as leaders. They constituted an expansion and merging of the "Weapon" and "Battle" design with increased armamment, and were the largest destroyers ever built for the Royal Navy. Of all-welded hull construction. Of wartime design, although they incorporate improvements subsequently devised. They represented an ingenious and comprehensive light warship class. Habitability and accommodation were of high standard. They had improved anti-aircraft and anti-submarine systems. Cost. £2,047,000 to £2,880,000 each.

Guided Missiles

Decoy was temporarily fitted with a "Seacat" instal-General

Guided Missiles
Decoy was temporarily fitted with a "Seacat" installation aft and Diamond, Diana and Duchess were to have been fitted with "Seacat" as close range anti-aircraft armament, but in 1963 it was decided that none of the "Daring" class would carry "Seacat".

Gunnery
The 4.5 inch turrets were of a new type, fully auto-The 4-5 inch turrets were of a new type, fully automatic and radar controlled. Dolnty, Daring, Defender and Delight have three twin Mk. V 40 mm. mountings. Decoy, Dlamond, Dlana and Duchess have two single 40 mm. only. In 1959 Decoy had her after twin Bofors removed and replaced by a deckhouse support for "Seacat" guided missiles. Duchess, as leader, has 4—3 pdr. saluting guns on the after 4-5 inch gun deck. Torpedo Tubes

Originally mounted ten 21 inch torpedo tubes, but the after bank of five tubes was removed in 1958-59 and replaced by a deckhouse for extra mess accommodation, and the forward pentad mounting was suppressed in Dalinty, Daring, Defender and Delight in 1963-64.

1963-64.

Engineering
The propelling machinery was of advanced design developed by PAMETRADA (Parsons and Marine Engineering Turbine Research and Development Association) and manufactured by Wallsend Slipway & Engineering Co. Ltd., in Daring, and by the builders in the others. Steam conditions were the highest used in ships of the Royal Navy, the boilers being designed for superheat control. Steam pressure 650 lbs. per. sq. in Temperature 850 deg. F. Propellers 300 r.p.m. 12 ft. diameter. Electrical

Electrical All-electric galleys, laundry and fluorescent lighting. Decoy, Diamond, Diana and Duchess differed from previous ships of the Royal Navy in that they had an alternating current installation, operating at 440 volts, 3-phase, 60-cycles per second, Dainty, Daring, Defender and Delight had direct current at 220 volts.

and Delignt has successful and successful and successful and a deckhouse abaft the after funnel. In Decoy the deckhouse replacing the after tubes was built out with a platform reaching the ship's sides, supported by light stanchions, for "Seacat" launcher



(Duchess is lent to the Royal Australian Navy, see page 14)



DAINTY (after long refit 1963-64)

1965, Official



DIANA

Nomenclature

The following four ships were originally allocated other names:—Decoy (ex-Dragon), Defender (ex-Dogstar), Delight (ex-Disdain, ex-Ypres) and Diana (ex-Druid).

Closs
Eight other units of this class ordered under the Second World War Construction Programme but cancelled after the cessation of hostilities were Danae, original Decoy, original Delight, Demon, Dervish, Desire, Desperate and Doughty.

Dainty, Daring, Defender and Delight underwent long refit in 1963-64. Torpedo tubes removed. Photographs

Photographs
A photograph of Daring appears in the 1957-58 edition; of Duchess in the 1957-58 and 1958-59 editions, of Defender in the 1959-60 edition, of Diana (with ten tubes) in the 1960-61 edition, of Delight in the 1960-61 and 1961-62 editions, and of Decoy (temporarily fitted with "Seacat" guided weapon installation aft) in the 1962-63 and 1963-64 editions,



1964. Official

Launched

Laid down

Completed

Destroyers-continued

Pen. No.

Name

AGINCOURT

Fleet Radar Pickets (Converted Destroyers)

4 Later "Battle" Class

2,780 tons standard (3,430 tons Displacement:

Dimensions:

2,780 tons standard (3,430 tons full load)
355 (pp.), 364 (w.l.), 379 (o.a.) × 40½ × 17½ feet.
4-4-5 inch (2, twin forward), (see Gunnery notes below) I quadruple launcher aft for "Seacat" anti-aircraft missiles (see Guided Missiles)
Removed (see General)
1 Squid triple barrelled depth charge mortar Guns: Guided weapons:

Tubes: A/S weapons:

Machinery:

I Squid triple barrelled depth charge mortar
Parsons geared turbines, 2 shafts.
S.H.P.: 50,000=35.75 kts. (designed), 30.5 kts sea speed
2 Admiralty 3-drum type (400 lb./sq., in.; 650 deg. F.)
680 tons Boilers: Oil fuel:

1,300 miles at full power, 3,000 miles at 20 kts., 4,400 miles at Radius:

12 kts. 232 to 268 Complement:

General
Apart from heavier main armament this class embodied improvements on earlier destroyers. Before conversion they mounted ten 21-inch torpedo tubes in two quintuple banks on the centre line abaft the funnel, and Agincourt and Corunno were fitted as Leaders.

Gunnery Before reconstruction these ships mounted eight 40 mm

anti-aircraft guns in four twin mountings.

anti-aircraft guns in four twin mountings.

Conversion
Known as "Battle class AD Conversions". Agincourt,
Aisne, Borrosa and Corunna were converted into fleet radar
pickets (aircraft direction destroyers), see Radar notes
and Guided Missiles note. Little remains of the original
destroyers except hull, engines and boilers. Internally the
ships were completely rebuilt to give a higher standard of
living and fighting efficiency. The operations room is one
of the most complex and compact ever contrived in
destroyers. All four ships completed conversion in Jan.
to May 1962. Two three-bladed propellers, 11½ ft. diameter, 300 r.p.m.

Guided Missiles
During conversion a guided weapons system was fitted to mount the "Seacat" launcher on the after superstructure, which, with the complex radar and gunnery systems, needs alternating current generators (the ships normally use direct current).

Radar
Fitted with a beam to beam lattice foremast striding across the ship similar to an electric grid tower for the 293 type radar on its platform and five more aerials. The ships also have a mainmast amidships carrying 27 aerials. The most prominent feature is the 965 radar, described as a double bedstead, twice the size of the normal bedstead or advanced radar scanner Radar



ALSNE

022



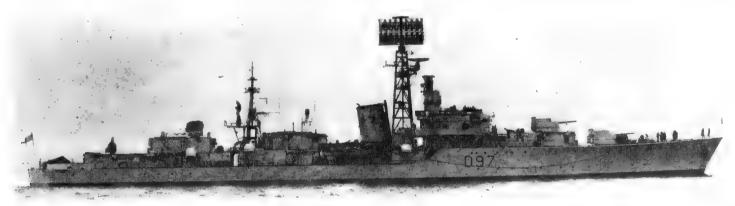
AGINCOURT

Disposals
Of the later "Battle" class, Alamein was scrapped in
1965 with Jutland and Dunkirk.

MATAPAN (see full particulars in the 1961-62 edition) laid iip in reserve, is to be converted into Trials Ship

1962, Wright & Logan

Disposals of "Weapon" Class Radar Pickets
Of the Fleet Radar Pickets (converted destroyers) of the
"Weapon" class, Battleaxe was scrapped in 1964, and
Scorpion in 1965. Broadsword was on the scrap list in 1966
and Cross



CORUNNA

1964, Official



Destroyers-continued

Anti-Submarine .Escorts

4 "Ca" Class

2,020 tons standard (2,600 tons full load)
339\(\frac{1}{2}\) (pp.), 350 (w.l.), 362\(\frac{2}{3}\) (o.a.)
\(\text{353} \text{ X | 17 feet} \)
3-45 inch, 4-40 mm. AA.
Seacat in Caprice, Cavalier
4 21 inch (quadrupled). Removed in Cambrian, Carysfort
2 Squid triple-barrelled depth charge mortars in "X" position
Parsons geared turbines. 2 shafts
5-H.P.: 40,000 36-75 kts. (dc signed), 31 25 kts. sea speed
2 Admiralty 3-drum type (300 lb./sq. in., 640 deg. F.)
80 tons
1,300 miles at full power, 2,800 Displacement: Guns: Guided weapons: Tubes A.5 weapons: Machinery. Boilers: Oil fuel 1.300 miles at full power, 2,800 miles at 20 kts. 186 (Leaders, 222) Radius: Complement:

Complement: 100 (Leaders, AAA, General The "C" group of destroyers were of emergency war design. They were built as 4 flotillas, i.e. "Caesar," "Chequers," "Cossack" and "Crescent" classes.

"Chequers," "Cossack and Crescent Classe."
Reconstruction
"Ca" class underwent a much more extensive refit
than classes previously modernised, with superstructure
extended aft and modified bridge.
In these "Ca" class conversions Carysfort and Cavalier
have different bridges from Cambrian and Caprice which
have "Leopard" type.

Gunnery
Former armament was 4—4.5 inch and 6—40 mm
guns (also 8—21 inch torpedo tubes). The 4.5 inch gun
in "X" position was removed.
Abpearance
There are variations in appearance after reconstruction and modernisation for anti-submarine warfare.

Photographs A photograph of Cavalier appears in the 1958-59 edition,

A photograph of Cavalier appears in the 1958-59 edition, Nomenclature
Six of this class were originally allocated other names:—Caesar (ex-Ranger), Cambrian (ex-Spitfire), Caprice (ex-Swallow), Carron (ex-Strenuous), Cassandra (ex-Tourmaline) and Cavendish (ex-Sybil).

Transfers
Of the "Cr" class, Crescent and Crusader were transferred to the Royal Canadian Navy in 1945, Cromwell, Crown, Croziers and Crystal were sold to Norway in 1946, and Creole and Crispin were sold to Pakistan in 1956. Of the "Ch" class, Chivalrous was transferred to Pakistan in 1953 and Charity in 1958.

Disposals
Constance was scrapped in 1956, Comus in 1958, Contest and Caesack in 1960, Chieftain, Childers, Cockade, Comet and Consort in 1961, Concord and Cheviot in 1963, Chaplet

Name Pen. No. Builders Laid down Launched Completed Scotts' Shipbuilding & Engineering, Greenock Yarrow & Co. Ltd., Scotstoun J. Samuel White & Co. Ltd., Cowes, I. of W. J. Samuel White & Co. Ltd., Cowes, I. of W. CAMBRIAN CAPRICE CARYSFORT CAVALIER 85 01 25 73 14 Aug. 28 Sep. 12 May 28 Feb. 0000



CAPRICE (refitted with "Seacat" missile launcher on after superstructure)

1966, Official

in 1964, and Chevron in 1965. Chequers is being scrapped in 1966. Carron, latterly employed as Navigation Training Ship in the Portsmouth Squadron, Caesar, Cassandra and Cavendish were on the scrap list in 1966.

Disposals of other Destroyers
Of the Early "Battle" class, Hogue was discarded for scrap in 1960, Gravelines, St. James and St. Kitts in 1961; Vigo was scrapped in 1964, Armoda, Barfleur and Finisterre in 1965, and Camperdown, Lagos, Sluys, Solebay and Trafalgar are for disposal in the near future. Saintes became tender to Caledonia training establishment before disposal. Cadiz and Gabbard were sold to Pakistan in 1956 and renamed Khaibar and Badr, respectively.

Of the "O" class, Obedient was for disposal in 1961.

Opportune was scrapped in 1955, Obdurate was expended in tests at the Naval Construction Research Establishment at Rosyth, Oribi was transferred to Turkey and renamed Gayret. Offo, Onslought and Onslow were transferred to Pakistan and renamed Tariq, Tughril and Tippu Sultan, respectively.

Of the "M" class, Musketeer was broken up in 1956 and Marne, Matchless, Meteor and Milne were turned over to Turkey on 29 June 1959.

Of the "N" class, Napier, Nepal Nizam and Noble were scrapped in 1956, and Norman in 1958.

Of the "Z" class, Zambesi and Zebra were scrapped in 1959 and Zephyr in June 1958.

The sole survivor of the "S" class, Savage, was disposed of in 1962



CAMBRIAN

1966, Official



Launched

Laid down

Completed

(A/S)FRIGATES PURPOSE GENERAL

No

'Leander' Class. Improved Type 12 19-3 New Construction 1st Rate (Anti-Submarine Versatile Type)

2,300 to 2,450 tons standard (2,800 tons full load) 360 (w.l.), 372 (o.a) × 41 or 43 × 18 feet (see Design) 2-4-5 inch (1 twin), 2 40 mm. Bofors AA. (single), 2-20 mm. (single) in Seacat ships 1 quadruple launcher for "Seacat" anti-aircraft missiles in Naiad and later ships (see Guided Weapons notes below) 1 "Limbo" three-barrelled depth charge mortar 1 Wasp lightweight helicopter armed with homing torpedoes 2 double reduction geared turbines. 2 shafts. S.H.P.: 30,000 = 30 kts. 2 Displacement: Dimensions: Guns:

Guided weapons:

A.S weapons:

Aircraft: Machinery:

Boilers: Complement: 2 251 to 263 (17 officers, 234 to 246 ratings)

General
This class exploits the good qualities of the successful "Whitby" class anti-submarine frigates in a more versatile Improved Type 12. The main new features are a long-range air warning radar, the "Seacat" anti-aircraft guided missile, improved anti-submarine detection equipment and a lightweight helicopter armed with homing torpedoes. Air conditioning and better living conditions were also provided in this mainly anti-submarine but flexible and all-purpose type. Seven ships were initially provided for, three more were ordered under the 1961-62 Navy Estimates, three under the 1962-63 programme, three under the 1964-65 programme, and three under the 1965-66 programme.

Guided Weapons
Naiad was the first of the class to be completed with
"Seacat" fitted followed by Arethusa, Cleopatra, Danae
Juno, Minerva, Phoebe and Sirius. The 40 mm. guns mounted
in the earlier ships will eventually be replaced by "Seacat"
launchers and directors.

Design
The "Leander" class have hull and machinery similar to the "Whitby" class, but are of revised and advanced design for a composite anti-submarine, anti-aircraft and air direction role. They are equipped with VDS (Variable Depth Sonar). Later ships have beam of 44 feet to improve stability.

Nomenclature

Nomenclature
Ajax, Dido and Leander were originally to have been
the last three of the "Rothesay" class, Fowey, Hostings
and Weymouth, reapt tively. Penelope was originally to
have been the fifth of the "Salisbury" class, Coventry.

Photographs
Of Leander in the 1963-64 and 1964-65 editions, of Ajax and Penelope in the 1964-65 edition, and of Naiad in the 1965-66 edition.

ranne	140.	Dallacia	2010 001111	Eddireited	Compresso
AJAX DIDO LEANDER PENELOPE AURORA EURYALUS GALATEA ARETHUSA NAIAD CLEOPATRA SIRIUS MINERVA PHOEBE DANAE JUNO ARGONAUT ANDROMEDA JUPITER HERMIONE BACCHANTE SCYLLA CHARYBDIS	F 114 F 104 F 109 F 127 F 10 F 18 F 38 F 38 F 28 F 40 F 45 F 42 F 52 F 56	Cammell Laird & Co. Ltd., Birkenhead Yarrow & Co. Ltd., Scotstoun, Glasgow Harland & Wolff Ltd., Belfast Vickers-Armstrongs Ltd., Tyne John Brown & Co. (Clydebank) Ltd. Scotst's Shipbuilding & Eng., Greenock Swan, Hunter & Wigham Richardson, Tyne J. Samuel White & Co. Ltd., Cowes Yarrow & Co. Ltd., Scotstoun, Glasgow H.M. Dockyard, Devonport H.M. Dockyard, Devonport H.M. Dockyard, Devonport John I. Thornycroft Ltd., Tyne Alex. Stephen & Sons Ltd., Glasgow H.M. Dockyard, Devonport John I. Thornycroft Ltd., Woolston Hawthorn Leslie Ltd., Hebburn-on-Tyne H.M. Dockyard, Portsmouth Yarrow & Co. Ltd., Scotstoun, Glasgow Alex. Stephen & Sons Ltd., Glasgow Vickers Ltd., High Walker, Newcastle H.M. Dockyard, Devonport	12 Oct. 59 2 Dec. 59 10 Apr. 59 11 Mar. 61 1 June 61 2 Nov. 61 29 Dec. 61 17 Sep. 62 30 Oct. 62 19 June 63 9 Aug. 63 26 July 63 3 June 63 16 Dec. 64 16 July 64 27 Nov. 64 25 May 66 6 Dec. 65	16 Aug. 62 22 Dec. 61 28 June 61 17 Aug. 62 28 Nov. 62 6 June 63 23 May 63 5 Nov. 63 4 Nov. 63 25 Mar. 64 42 Sep. 64 19 Dec. 64 8 July 65 24 Nov. 65 8 Feb. 66	10 Dec. 63 18 Sep. 63 27 Mar. 63 31 Oct. 63 9 Apr. 64 16 Sep. 64 25 Apr. 65 15 Mar. 65 4 Jan. 66 15 June 66 14 May 66 15 Apr. 66

Builders



GALATEA

1965, J. W. Kennedy



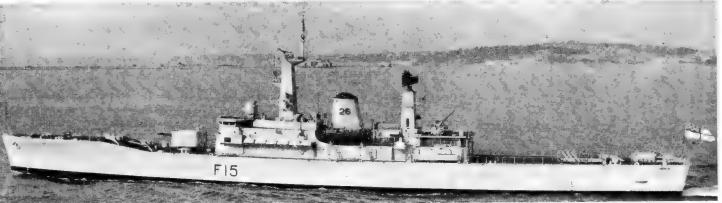
DIDO

1964, Official



CLEOPATRA (with "Seacat" ship-to-air guided missile launcher)

1966. Official



EURYALUS (with 40 mm. Bofors)

GENERAL PURPOSE FRIGATES (Gas Turbine)

7 "Tribal" Class. Type 81 1st Rate (Destroyer Type)

Displacement: 2,300 tons standard (2,700 tons Dimensions:

Guided weapons:

A/S weapons:

2,300 tons standard (2,700 tons full load)
350 (w.l.), 360 (o.a.) × 42½ × 17½ feet
2—4.5 inch d.p. (single); 2—40 mm. AA. (single)
I quadruple launcher for "Sea cat" ship to air missiles in Zulu 1 "Limbo" three-barrelled depth charge mortar
I Westland Wasp helicopter
I Metrovick geared steam turbine.
S.H.P.: 12,500, bossted by I Metrovick gas turbine. S.H.P.: 7,500. I shaft. Total S.H.P.: 7,500. I shaft. Total S.H.P.: 20,000 –28 kts.
I Babcock & Wilcox (plus I auxiliary boiler)
253 (13 officers, 240 ratings)

Boilers: Complement:

General

General General purpose frigates designed to fulfil economically all the functions of frigates rather than have an outstanding performance in any one specialised role, but capable of meeting the main escort functions of antisubmarine protection, anti-aircraft defence, and aircraft direction. Ashanti, Eskimo and Gurkha were ordered under the 1955-56 Navy Estimates, Nubian and Tartar under the 1956-57 programme, and Mohawk and Zulu under the 1957-58 programme. These versatile ships have two funnels like destroyers, and were designed for general duties formerly undertaken by destroyers. They are fully air conditioned in all accommodation space and most working spaces. Ashanti cost £5,220,000. Turbine Design Turbine Design

Turbine Design

These ships have COSAG (combined steam and gas turbine) machinery plants. The engines are right aft. The principle employed is that of highly efficient steam turbines and gas turbines geared to the same propeller shaft. The gas turbines provide a high concentration of power in a very compact form and are used to supplement the steam turbines for sustained bursts of high speed work. They are also able to develop their full power from cold within a few minutes, providing unprecedented mobility. The machinery installations were conceived and designed by the Yarrow-Admiralty Research Department of Yarrow & Co. Ltd., Scotstoun, Glasgow, in conjunction with the Admiralty. The Metropolitan-Vickers Electrical Co. Ltd., Manchester, designed and manufactured the steam turbines, gas rurbines, gearing and control gear. This lightweight and compact, machinery enabled more fighting equipment to be carried than would have been possible with orthodox machinery. machinery

Anti-Submarine
The "Ashanti" class were the first frigates designed to carry a helicopter for anti-submarine reconsissance, Operational

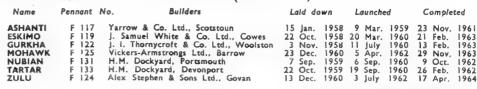
These ships have a totally enclosed bridge and an air-conditioned operations room. They are equipped with warning radar of the most modern design. They are fitted with stabilisers and have twin rudders

Photographs

Photographs

Three photographs of the prototype Ashanti, a large port bow oblique aerial view, a port quarter oblique aerial view, and a dead broadside port surface view appear in the 1962-63 edition, and a port quarter surface view with helicopter on board in the 1963-64 and 1964-65 editions. A large starboard broadside view of Gurkha and a port bow view of Nublan appear in the 1963-64 edition, a starboard quarter view of Tartar in the 1963-64 to 1965-65 editions, and a port broadside view of Mehawk in the 1964-65 and 1965-66 editions.

Engineering
A steam turbine provides the power for normal cruising and manoeuvring. A gas turbine diving on to the same propeller shaft provides the additional power for high speed steaming. This gas turbine also enables the ship lying in harbour without steam up to get under way instantly in emergency. The machinery is remotely controlled at all powers. The main boiler works at a pressure of 550 lbs. per sq. in. and a temperature of 850 deg. F. Five-bladed propeller, 280 r.p.m.





1966, Wright & Logan

1965. Wright &



1964. J. W. Kennedy

NUBIAN

ESKIMO

Electrical

The ship's generator capacity of 1,500 kW will meet high demands. Fluorescent lighting is used for all living accommodation.

Habitability
A high standard of living accommodation is incorporated All manned compartments are air-conditioned.

Construction

Ships are of all welded prefabricated construction and
the structural arrangements were designed to provide a
robust hull with special emphasis on the prevention of
corrosion. Denny Brown stabilisers are fitted to reduce
rolling in heavy seas, while good seakeeping qualities
enable them to maintain high speed in rough weather.



ANTI-SUBMARINE FRIGATES

9 "Rothesay" Class, Modified Type 12 1st Rate (Anti-Submarine Quality Type)

2,200 tons standard (2,600 tons ful ood) 370 (o.a.) × 41 × 17½ feet 2 4.5 inch (1 twin), 1 40 mm 2 Limbo 3-barrelled mortars. 2 double reduction geared turbines, 2 shafts. S.H.P: 30,000 30 kts. Dimensions: Guns: A S weapons: Machinery:

Boilers:

400 tons 200 (9 officers and 191 ratings) Oil fuel: Complement:

General

General
Basically similar to the "Whitby" class but with modifications in layout as a result of experience gained with the earlier Type 12, see below. There are several differences, including the single Bofors, and the build up of the after superstructure around the mainmast.

Guided Missile Armament
The "Rothesay" class are to be fitted with "Seacat" surface-to-air guided missiles as secondary armament in place of Bofors close range anti-aircraft guns. A single 40 mm. gun mounted as a temporary measure, will be replaced by a "Seacat" launcher and director.

Conversion

Conversion
Rothesay was taken in hand at H.M. Dockyard, Rosyth, in May 1966 for a two-year reconstruction during which she will be equipped to operate a Wessex Waso lightweight anti-submarine helicopter armed with homing torpedoes and fitted with "dipping" sonar. A flight deck and hangar will be built on the stern, necessitating the removal of one of her anti-submarine mortars. A "Seacat" will replace the 40 mm. gun.

6 "Whitby" Class. Type 12.

Ist Rate (Anti-Submarine Quality Type)

Displacement: 2,150 tons standard (2,560 tons full load) 360 (w.l.), 369‡ (o.a.) × 41 × Dimensions:

Tubes: A S weapons:

360 (w.l.), 369% (o.a.) × 41 × 17½ feet 2-4-5 inch (1 twin), 2-40 mm. Bofors AA. (1 twin) (See Torpedo Mounting notes) 2 "Limbo" three-barrelled depth charge mortars 2 sets double reduction geared steam turbines. 2 shafts, S.H.P-30.430=31 kts. (29 kts. sea) 2 Babcock & Wilcox 370 tons Machinery:

2 Babcock & Wilcox 370 tons 221 (11 officers and 210 ratings) Boilers: Oil fuel: Complement:

General

General Primarily designed for the location and destruction of modern submarines, these frigates were fitted with the latest underwater detection equipment and anti-submarine weapons of post-war development. Good sea-keeping qualities enable the vessels to maintain their high speed in rough seas. Their twin-rudders improve manoeuvrability. They are all welded and the structural arrangements were specially designed to achieve the lightest possible structure.

specially designed to achieve the lightest possible structure. Engineering Propelling machinery fitted included geared turbines of novel design and high power. Double reduction gearing allows low propeller revolutions of 220 r.p.m. at high power and the propeller efficiency is correspondingly high. This, coupled with improvements in hull design, enables these frigates to achieve over 30 knots on only 75 per cent of the power required by older destroyers of comparable displacement. Arrangement of the engine room machinery is outstandingly good. The boilers work at a steam pressure of 550 lbs. per sq. in. and a temperature of 850 deg. For superheat.

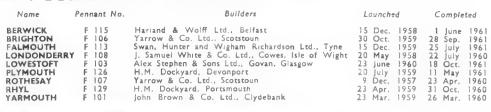
Anti-submarine Warfare

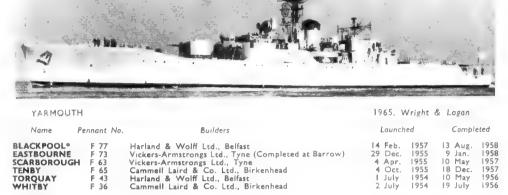
Marti-supmarine warrare

Have modern equipment for hunting and killing submarines and facilities for directing anti-submarine air-

craft.

Torpedo Mountings
Provision was made in the design for mounting 12
A/S torpedo tubes (8 single, 2 twin), but later ships never carried them, and they were removed from earlier ships. Scarborough was the first to be fitted with tubes (four fixed on each side, and two swivel mountings).





* (Blackpool is lent to the Royal New Zealand Navy, see page 193).



FALMOUTH

Electrical

The electrical system is alternating current, 440 volts, three phase, 60 cycles per second.

Operational

Operational

When completed they were considered to be the most useful class of ships of their size ever put into service. With high fo'c'sle and clean lines they ride well in a sea-way and are exceptionally dry. The enclosed bridge is spacious, with splendid vision, heated windows in the fore of one bridge being an asset in Arctic waters. Internal communications satisfied every demand placed apon them The operations room was the finest ever put into a snip of the size.

Appearance

Later ships were completed with a thicker, raked back funne, with a dome cap (actually there are two stacks inside the funnel) and early ships of the class, which had a vertical funnel, were taken in hand for similar a te acions as opportunities offered. Eastbourne, Scarberough, Tenby and Torquøy, training ships, are now slightly different in appearance.

Nomenclature
The "Whitby" and "Rothesay" classes were named after seaside resorts and coastal towns. The ships begun as Fowey, Hastings and Weymouth were re-designed as units of the "Leander" class and re-named Ajax, Dido and Leander, respectively, see previous page.

1963, Wright & Logan

Improvement
Although basically similar to the "Whitby" class, the opportunity was taken to incorporate in the "Rothesay" class modifications which extensive experience with the earlier ships had shown to be advantageous

earlier ships had shown to be advantageous Photographs
Photographs appear of Whitby in the 1957-58 edition, of Torquay in the 1957-58 to 1962-63 editions, of Eastbourne in the 1958-59 to 1960-61 editions, of Tenby in the 1958-59 edition, of Scarborough in the 1957-58 and 1959-60 editions, of Rothesay in the 1960-61 edition (Addenda), of Blackpool in the 1960-61 to 1962-63 editions, of Plymouth in the 1962-63 and 1963-64 editions, and of Rhyl in the 1963-64 and 1963-64 editions. 1964-65 editions



12 "Blackwood" Class. Type 14. 2nd Rate (Anti-Submarine Utility Type)

1.180 tons standard (1.456 tons full load) 300 (w.l.), 310 (o.a.) \times 33 \times 15 $\frac{1}{4}$ Dimensions: feet
2—40 mm. Bofors AA. (see
Gunnery notes below)
Removed (see Torpedo Armament Tubes: notes below)
2 "Limbo" three-barrelled depth

A S weapons:

2 "Limbo" three-barrelled depth charge mortars

I set geared steam turbines. I shaft. S.H.P.: 15,000 = 27.8 kts. (max.), 245 kts. sea speed (see Machinery Conversion notes below concerning Exmouth)

2 Babcoch & Wilcox

111 (7 officers, 104 ratings) Machinery:

Boilers: Complement:

General

General
Very lightly armed, as far as guns are concerned.
Designed for a mainly anti-submarine role, Of comparatively simple construction, All built in pre-fabricated sections. In 1958-59 their hulls were strengthened to stand up to the severe and prolonged sea and weather conditions on fishery protection duties in Icelandic waters.

weather conditions on fishery protection guties in icelandic waters.

Anti-Submarine Warfare

The two Limbos can each fire with great accuracy a
pattern of large depth bombs which can be set to explode at a predetermined depth. They can be trained
over a wider arc than previous types of anti-submarine
mortars, and have a much greater and more accurate range.

The original gun armament was three 40 mm. Bofors A.A. guns, but one has been removed

Torpedo Armament 4-21 inch tubes

Torpedo Armament
4—21 inch tubes (2 twin) were mounted in Blackwood. Exmouth, Malcolm and Palliser but have now
been removed from all ships.

Engineering
All engined by their builders, except Pellew and Russell, by Wallsend Slipway & Eng. Co. Ltd., and Grafton and Malcolm by Parsons Marine Steam Turbine Co. Ltd., Wallsend-on-Tyne. The turbines were of advanced design. The propelling machinery of Hardy and Keppel includes turbines of English Electric Co. design. The boilers work at a steam pressure of 550 lbs. per sq. in. and a temperature of 850 deg. F. of superheat. Four-bladed, 12 ft. diameter propeller, 220 r.p.m.

Fishery Protection Squadron Duncan (on completion as Squadron Leader in 1958), Malcolm (in 1959), Palliser (Apr. 1958) and Russell (Jan. 1958) formed the 1st Division of the Fishery Pro-tection Squadron.

Photographs

Photographs
Photographs appear of Keppel in the 1956-57 and 1957-58 editions, of Blackwood in the 1958-59 edition, of Palliser in the 1959-60 edition, of Pellew in the 1958-59 to 1963-64 editions, of Duncan in the 1961-62 to 1963-64 editions, and of Grafton in the 1964-65 edition.

Nomenclature

Named after famous Captains of British naval history

Machinery Conversion
It was announced on 10 Feb. 1966 that the Admiralty
Board had approved the conversion of Exmouth to all-gas
turbine propulsion to provide the Royal Navy with the
first major warship in the world to be propelled entirely
by gas turbines, heralding a new era in naval marine engineering.

Exmouth will have one B.S.E. Olympus for full power, with two Proteus engines for crusing. Both these engines are marine versions of well-known and proven aircraft gas turbines and their use in waiships benefits from the extensive research and development programmes already completed for aircraft use, and from which they have evolved.

The Olympus, which underwent shore trials at the makers works at Ansty, near Coventry, in summer 1966, is likely to be used in any new classes of frigates and destroyers which may come into service in the early 1970's In the meantime Exmouth will get the Olympus to sea as a main propulsion plant some years earlier and will enable the operational characteristics and benefits of all-gas turbine propulsion to be fully evaluated in the rigours of naval service. These benefits include significant reductions in weight and space of machinery and fuel, and in operating and maintenance staffs.

Gas turbine machinery installations in Exmouth and probably in future ships will be operated and controlled entirely from the bridge. Other new features in Exmouth will be the use of a gas turbine developed by Centrax Ltd. of Newton Abbot, Devon, for driving the main electric generator, and this will incorporate a waste heat boiler to produce steam for auxiliary and domestic purposes. A controllable pitch propeller by Stone Manganese Marine

Anti-Submarine Frigates—continued

Name	Pennant No.	Builders	Launched	Completed
BLACKWOOD DUNCAN DUNDAS EXMOUTH GRAFTON HARDY KEPPEL MALCOLM MURRAY PALLISER PELLEW RUSSELL	F 78 F 80 F 48 F 51 F 54 F 88 F 91 F 62 F 97	John 1. Thornycroft & Co. Ltd Southampton John 1. Thornycroft & Co. Ltd Southampton J. Samuel White & Co. Ltd., Cowes, Isle of Wight J. Samuel White & Co. Ltd., Cowes, Isle of Wight J. Samuel White & Co. Ltd., Cowes, Isle of Wight Yarrow & Co. Ltd., Scotstoun, Glasgow Alex. Stephen & Sons Ltd., Govan, Glasgow Alex. Stephen & Sons Ltd., Govan, Glasgow Swan, Hunter & Wigham Richardson Ltd., Wallsend Swan, Hunter & Wigham Richardson Ltd., Wallsend	4 Oct. 1955 30 May 1957 25 Sep. 1953 16 Nov. 1955 13 Sep. 1954 25 Nov. 1955 13 Aug. 1954 18 Oct. 1955 22 Feb. 1955 10 May 1956 29 Sep. 1954	22 Aug. 1957 21 Oct. 1958 16 Mar. 1956 20 Dec. 1957 8 Jan. 1957 15 Dec. 1956 12 Dec. 1957 5 June 1956 13 Dec. 1957 26 July 1956 13 Dec. 1957 27 July 1956 14 Dec. 1957 26 July 1957



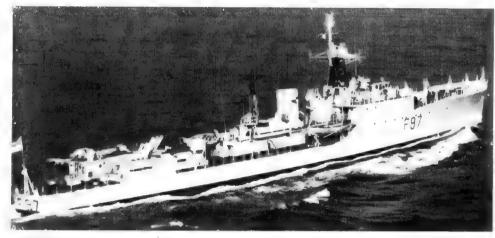
EXMOUTH

1966 Wright & Logan



1964. Skyfotos

DUNDAS



RUSSELL

Ltd., of Deptford, will be fitted for astern operation.

Design of the new installation for Exmouth is being carried out by the Yarrow-Admiralty Research Department in conjunction with Bristol Siddeley Engines Ltd., under the overall direction of the Ship Department of the Ministry of Defence (Navy).

Conversion of Exmouth to take the Olympus engine will coincide with the scheduled long refit for the ship and will take place at H.M. Dockyard, Chatham. The ship is planned to start sea trials in a little over two years.

Use of gas turbines in warships has been pioneered by the Royal Navy since the second world war. Motor Gun

1963, Official

Boat 2009 fitted with the AEI Gatric Engine was the first to enter service in 1947, and this lead to the use of the B.S.E. Proteus engine in the "Brave" class of fast patrol boats. These were then followed by the combined steam and gas turbine (Cosag) plants in the "Tribal" class frigates and in the "County" class guided missile destroyers, both using G6 engines developed for the Royal Navy by A.E.I. Ltd. These have been most successful and have paved the way for the next step forward to an all-gas turbine installation.

The conversion of Exmouth expresses the confidence of the Admiralty Board in the continuing development and wider use of gas turbines for the Royal Navy



ANTI-AIRCRAFT FRIGATES

4 "Leopard" Class. Type 41 (Diesel Anti-Aircraft Type)

2,300 tons standard (2,520 tons Displacement:

2,300 (old) 320 (pp.), 330 (w.f.), 3391 (o.d.)×40×16 (max.) feet Dimensions:

(o.g.)×40×16 (max.) teet
4-45 inch (two twin turrets),
1-40 mm. Bofors AA. see Gunnery
and Guided Missile notes
Squid triple-barrelled depth
charge mortar
8 Admiralty standard range
diesels in three engine rooms,
2 shafts, B.H.P.: 12,380 25 kts. Guns:

A/S weapons: Machinery:

220 tons 2,300 miles at full power, 7,500 Od fuel: Radius: miles at 16 kts. 195 to 205

Complement:

These ships are designed primarily for the protection of convoys against aircraft. They could also serve as a medium type of destroyers in offensive operations.

Construction

They are all welded, and the structural arrangements represented the latest in the development of modern technique, opportunity having been taken in their build ting to study the problems associated with rapid production in emergency conditions. Jaguar, Lynx, and Puma were ordered on 28 June 1951, Leopard was laid down on 25 Mar. 1953 and Jaguar on 2 Nov. 1953. Fitted with stabilisers. The construction of another ship ordered under the 1956-57 Navy Estimates to have been named Panther, was cancelled owing to the 1957 defence

Engineering
The propelling machinery consists of Admiralty Standard Range I heavy oil engines coupled to the propeller shafting through hydraulic gear boxes. Puma's engines, of the latest Admiralty design, were manufactured by H.M. Dockyard, Chatham, and Polar Engines, Ltd., Glasgow, the installation being by Scotts' Shipbuilding and Engineering Co. Ltd. Engines of similar design are used for driving the ship's electric generators, and there were manufactured by Peter Brotherhood & Co. Ltd., Peterborough, The engines of Lynx were manufactured by Crossely Brothers, Manchester, and British Polar Engines, Glasgow, the installation being by John Brown & Co. Ltd., and the ship's electric generators were by Vickers-Armstrongs. The engines of Leopard were manufactured by Vickers-Armstrongs, Ltd., Barrow, and the engines of Jaguar by Crossley Motors Ltd., Manchester. Jaguar is the only ship of class to be fitted with controllable pitch propellers.

class to be fitted with controllable pitch propellers.

Design
While a study of propulsion machinery for frigates was being made the need for new frigates of various types emerged. The accent was still on long steaming range and small ships. The anti-aircraft frigates and aircraft-direction frigates were to be two-shaft ships with 8,000 s.h.p. on each shaft. No suitable steam design was available. The Admiratly Standard Range I Diesel was under development and gave promise of being a good engine of low weight—about 17 lb./s.h.p. The installation, compared with those of war-time frigates, was a great improvement, and it was therefore decided to engine these ships with four A.S.R. I Engines geared to each shaft.

Guided Missile Armament
Jaguar is to be fitted with "Seacat" close range antiaircraft guided missiles (see Gunnery notes).

Displacement

The original design called for a standard displacement of about 1,800 tons, but with improvements and additions incorporated during construction the ships turned out heavier (1,950 tons light displacement).

Nomenclature
All the ships of this class are named after big cats. The fifth and intended sixth ships of the class were successively

Builders Launched Name Pennant No. Completed 30 July 1957 23 May - 1955 12 Jan. 1955 JAGUAR Wm. Denny & Bros. Ltd., Dumbarton 12 Dec. F 37 F 14 F 27 F 34 H.M. Dockyard, Portsmouth
John Brown & Co. Ltd., Clydebank
Scotts' Shipbuilding & Engineering Co. Ltd., Greenock 30 Sep. 14 Mar. 24 Apr. LEOPARD 1958 LYNX 30 June



LEOPARD (main "mack")

1966, Official



LYNX (after refit)

to have been named Panther (see Construction notes above and Class notes below).

Fuel The fuel tanks have a compensating system, so that sea water replaces oil fuel as it is used.

Photographs
A large starboard bow view of Puma appears in the 1959-60 edition, a starboard bow view of Lynx (before refit) in the 1957-58 to 1961-62 editions, a large starboard broadside view of Jaguar in the 1960-61 to 1962-63 editions, a port bow view of Puma (before refit) in the 1962-63 and 1963-64 editions, a starboard quarter oblique aerial view of Leopard in the 1959-60 to 1963-64 editions, a port near-broadside surface view of Leopard in the 1964-65 edition, a large port broadside view of Lynx after refit in the 1963-64 and 1964-65 editions, and a starboard bow oblique aerial view of Jaguar at speed in the 1964-65 and 1965-66 editions.

Reconstruction

Lynx underwent extended refit in 1963 with new main "mack" (combined mast stack), Puma was similarly refitted in 1964, and Leopard in Oct. 1964-Feb. 1966.

Gunnery

The main armament of two twin 4.5 inch gun mountings and the gunnery armament control are similar to those mounted in the "Daring" class destroyers. The secondary armament, initially consisting of a twin Bofors mounting, will eventually be replaced by "Seacat" shipto-air guided missiles.

Class

Class
A ship of this class, originally to have been named Panther, built by John Brown & Co. Ltd., Clydebank, intended for the Royal Navy, was transferred to the Indian Navy and remaned Brahmaputra, see Indian section. Another Panther was projected to take her place, but this ship was not built as a unit of this class or under that name (see Nomenclature notes on following page).



AIRCRAFT DIRECTION FRIGATES

4 "Salisbury" Class. Type 61 (Diesel Aircraft Direction Type)

2,170 tons standard (2,350 tons Displacement:

Dimensions:

2,170 tons standers (a,see 2)
full load)
320 (pp.), 330 (w.l.), 339½
(o.a.)×40×15½ (max.) feet
2-4-5 inch, 2-40 mm. AA.
(1-40 mm. AA. in Lincoln)
see Guided Missile Armament
Squid triple-barrelled depth A/S weapons:

Squid triple-barrelled depth charge mortar 8 Admiralty standard range diesels in three engine rooms. 2 shafts. B.H.P.: 12,380=25 kts. Gas turbine alternator in Llandaff (see Englneering) 230 tons Machinery:

Oil fuel: Radius:

2,300 miles at full power, 7,500 miles at 16 kts.
207 (9 officers, 198 ratings)
Llandaff 206 (8 officers)
Lincoln 210 (10 officers) Complement:

General

The frigates of this class are designed primarily for
the direction of carrier-borne and shore based aircraft,
They could also serve as a lighter type of destroyer in

They could also serv offensive operations. Construction

Construction
Chichester, Lincoln and Liandaff were ordered on 28 june, 1951. Salisbury, the prototype ship, was laid down on 23 jan. 1952, Chichester on 25 june 1953, and Lincoln on 20 May 1955. Construction was all welded and the design largely prefabricated in such a manner as to allow for rapid building in emergency. The construction of the fifth ship, Exeter, ordered under the 1956-57 Navy Estimates, was cancelled owing to the 1957 defence economies. Fitted with stabilisers (except in Lincoln).

Engineering
Solisbury has twin screws and is powered by Admiralty
Standard Range I heavy oil engines coupled to the propoller
shafts through hydraulic couplings and oil operated reverse
and reduction gear boxes. These engines, of the latest
Admiralty design, were manufactured by Messrs. VickersArmstrongs, Barrow who also made the engines of similar
design for driving the ship's electric generators. The hull
was built and machinery and other fittings installed by
H.M. Dockyard, Devonport.

Liandoff has similar main engines manufactured by Messrs. British Polar, of Glasgow. Engines of similar design for driving the ship's electric generators were manufactured by Messrs. Vickers-Armstrongs. Barrow-in-Furness. Llandoff is the only Type 61 frigate to have a 500 kw. gasturbine alternator and three diesel generators. Other ships of the class, and Type 41 frigates, have four diesel generators. This new gasturbine alternator was manufactured by Messrs. W. H. Allen & Sons, Bedford.

Lincoln is fitted with controllable pitch propellers, rotating at 200 r.p.m., which are 12 feet in diameter, manufactured by Messrs. Stone Marine & Engineering Co. Ltd.

Guided Missile Armament
A single 40 mm. AA. gun, mounted in Lincoln, as a temporary measure, will eventually be replaced by a "Seacat" guided missile launcher and director.

Nomenclature
All ships of this class are named after cathedral cities. A fifth ship was to have been named Exeter. A sixth ship, to have been named Coventry, was originally ordered as Panther and was built as Penelope (see Nomenclature notes under "Leander" class and "Leopard" class on preceding pages). A seventh ship was to have been named Gloucester.

Displacement
The originally designed standard displacement was 1.738 tons, but with modifications and additions during construction the ships in fact turned out heavier.

Reconstruction

Salisbury underwent extended refit in 1962. Her after funnel and lattice mast combination was replaced by a single tall funnel with Type 985 aerial on top, reminiscent





CHICHESTER (with fore and main "macks")

1965. Official



SALISBURY (with main "mack")

of the U.S. combined mast and stack or "mack". Chichester underwent similar refit in 1964 but with both fore and main "macks". Llandaff cempleted conversion with fore and main "macks" in 1966

Fuel The fuel tanks have a compensating system whereby sea water replaces oil fuel as it is consumed

Rodor
All four ships have highly developed electronic equipment, Chichester was fitted with a new type of radar display on the foremast and mainmast. The radar on the foremast consists of a "spoked" aerial of the "cartwheel" type

1965, Wright & Logan

Photographs
Starboard quarter and starboard bow views of Salisbury (before reconstruction) appear in the 1957-58 (Diamond Jubilee) edition, starboard quarter and port bow views of Llandaff in the 1958-59 edition (in Addenda), a large starboard bow view of Chichester in the 1958-59 to 1960-61 editions, a port quarter view of Salisbury (before reconstruction) in the 1959-60 to 1961-62 editions, a port poradistic view of Lincoln in the 1960-61 to 1963-64 editions, a starboard broadside view of Lincoln in the 1960-61 to 1963-64 editions, a large starboard broadside surface view of Salisbury after reconstruction in the 1963-64 and 1964-65 editions, a port bow surface view of Chichester after reconstruction in the 1964-65 edition, and a starboard broadside surface view of Llandaff in the 1964-65 and 1965-66 editions



FAST ANTI-SUBMARINE FRIGATES

(ex-Destroyers)

9 "Type 15" Ist. Rate ""U","V","W",and"Z"Classes (Fully Converted from Destroyers)

Displacement:	2,240 tons standard (2,880 tons
Dimensions:	full load) $339\frac{1}{2}$ (pp.), 350 (w.l.), 362 $\frac{3}{4}$ (o.a.) × $35\frac{3}{3}$ × 17 feet
Guns:	2-4 inch (1 twin), 2-40 mm. AA. (1 twin)
A S weapons:	"U" class, Troubridge and Zest: 2 Limbo three-barrelled depth charge mortars
	Verulam and Wakeful
	2 Squid triple-barrelled depth
Tubes.	charge mortars Provision for tubes. 8 Homing torpedo tubes were fitted in Ulster, 4 fixed on each side
Machinery.	Parsons geared turbines. 2 shafts. S.H.P.: 40,000 = 36.75 kts. (designed), 31.25 kts. sea speed
Boilers:	2 Admiralty 3-drum type (300 lb. sq. in., 640 deg.F.)
Oil fuel:	570 to 600 tons
Radius:	1,300 miles at full power. 2,800 to 3,000 miles at 20 kts.
Complement.	195 (15 officers, 180 ratings)

Zest Fully converted from a destroyer into a fast anti-submarine frigate at H.M. Dockyard, Chatham, in Feb. 1954-1965. Has her twin 40 mm, mounting on the break of the forecastle. Three-bladed, 104 ft. diameter propellers, 320 r.p.m. "W" Class

Wakeful, ex-Zebra, converted by Scott's Shipbuilding & Engineering Co. Ltd., Greenock, in 1952-53, was refitted with higher open bridge in 1959 for Portsmouth Squadron duties, her 4 inch gun mounting being removed and replaced by a deckhouse.

Of the original flotilla of eight "W" class destroyers Wessex and Whelp were transferred to the South African Navy in 1950-52 and renamed Jan van Riebeeck and Simon van Stel, respectively, and Kempenfelt and Wager were sold to Yugoslavia in 1957 and renamed Kotor and Pula, respectively.

Of those converted into frigates Wrangler was transferred to the South African Navy on 29 Nov. 1956 and renamed Vrystaat, and Whirlwind and Wizard were scheduled for disposal in 1966.

"V" Class
Verulam was converted by H.M. Dockyard, Portsmouth, but she is now without 4 inch, Bofors, Squids or director as trials ship for new A/S equipment.

as trials ship for new A/S equipment.

Of the original flotilla of eight "V" class destroyers, Valentine and Vixen were transferred to the Royal Canadian Navy in 1944 and renamed Algonquin and Sioux, respectively, and the leader Hardy was lost in the Second World War.

Of those converted into frigates Vigilant and Virago were sold for scrap in 1965, Venus was scheduled for disposal by scrapping in 1965, and Volage was on the disposal list in 1966.

"U" Class

Converted in 1952-54, Ulster at H.M. Dockyard, Chatham, Undounted by J. Samuel White & Co. Ltd., Cowes, Urania by Harland & Wolff, Liverpool, and Ursa by Palmers, Hebburn. Ulster has a bowl-shaped sponson at the break and "Leopard" type bridge, Grenville and Undounted are fitted with helicopter platform aft.

Photographs of *Grenville* in the 1958-59 edition, of *Ulster* and *Urania* in the 1959-60 to 1961-62 editions and of *Undaunted* in the 1962-63 to 1965-66 editions.

Ulysses, Undine and Urchin were all listed for disposal y scrapping in 1965.

In July 1966 the 20 \times 30 ft, section from the stern of Urchin was fitted to Ulster, damaged in May, at H.M. Dockyard, Devonport.

Troubridge

Troubridge
This ship is different from early Type 15's. Her conversion was started by H.M. Dockyard, Portsmouth, in 1955, but completed by J. Samuel White & Co. Ltd., Cowes, on 29 July 1957. Has "Leopard" type bridge and 40 mm. mounting on the break of the forecastle. Sister ships Teazer, Tenacious, Termagant, Terpsichore, Tumult, Tuscan and Tyrian underwent limited conversion from destroyers to Type 16 fast anti-submarine frigates, but have now all been scrapped.

Name	Pennant No	. Builders .	Laid down	Launched	Completed
GRENVILLE TROUBRIDGE ULSTER UNDAUNTED URANIA URSA VERULAM WAKEFUL ZEST	F 83	Swan, Hunter & Wigham Richardson, Ltd. John Brown & Co. Ltd., Clydebank Swan, Hunter & Wigham Richardson, Ltd. Cammell Laird & Co. Ltd., Birkenhead Vickers-Armstrongs Ltd., Barrow John I. Thornycroft & Co. Ltd., Woolston Fairfield S.B. & Eng. Co. Ltd., Govan John I. Thornycroft & Co. Ltd., Woolston Fairfield S.B. & Eng. Co. Ltd., Govan John I. Thornycroft & Co. Ltd., Woolston	10 Nov. 41 12 Nov. 41 8 Sep. 42 18 June 42 2 May 42 26 Jan. 42 3 June 42	30 June 43	27 May 43 8 Mar. 43 30 June 43 3 Mar. 44 18 Jan. 44 10 Dec. 43 17 Feb. 44 20 July 44



ULSTER

1966, Wright & Logan



TROUBRIDGE

1965, Wright & Logan



WAKEFUL

1965, Dr. Giorgio Arra



URSA (Limbos aft)

1963, A. & J. Pavia



Fast Anti-Submarine Frigates (ex-Destroyers)—continued

| Early "Type | 5" | st Rate

" R " Class. (Fully Converted from Destroyers)

Displacement:

2,200 tons standard (2,700 tons

Dimensions:

2,200 tons standard (2,700 tons full load)
339½ (pp.), 350 (w.l.), 358½ (a.a.)×35½×17 (max.) feet
2—4 inch (twirr mount), 2—40 mm. Bofors AA.
2 "Limbo" three barrelled depth charge mortars. Provision for tubes Guns:

A/S weapons:

rube

Machinery:

tubes
Parsons geared turbines. 2 shafts.
S.H.P.: 40,000=36:75 kts. (designed) 31:25 kts, sea speed
2 Admiralty 3-drum type
580 tons

Boilers: Oil fuel: Radius: Complement:

580 tons 2,800 miles at 20 kts.

180

Conversion
Former fleet destroyer, converted to prototype fast frigate. Bridges, funnel, masts superstructure, 4—4-7 inch guns in single mountings, 4—2 pdr, pompors, 8—20 mm. AA. guns and 8—21 inch tubes in quadruple mountings, were removed entirely and the ship was stripped down to the bare hull. The forecastle deck was then extended aft, extensive use being made of aluminlum to reduce top weight. A new superstructure was built up, two short lattice masts stepped, short raked funnel erected, and two anti-submarine mortars arranged en echelon, mounted in the after shelter deck. She had a completely new armament, and represented the new conception of a frigate submarine-killer. Conversion at M.M. Dockyard, Portsmouth, was completed in July 1951. Fitted with torpedo tubes for experimental purposes, Refitted in 1955-56.

Name

No.

Builders

Laid down

Launched

Completed

RELENTLESS

F 185

John Brown & Co. Ltd., Clydebank 20 June 41 15 July 42

30 Nov. 42



RELENTLESS

Photographs

Disposals

A photograph of Rapid appeared in the 1963-64 idition.

edition.
Class
Of four original sister ships Racehorse was scrapped
(as destroyer) in 1950, and Raider, Redoubt and
Rotherham (Leader) were transferred to the Indian
Navy (as destroyers) in 1949 and renamed Rana, Ranjit
and Rajbut, respectively.

Disposals

Sister ships Roebuck and Rocket were on the list for disposal by scrapping in 1965, and Ropid was on the sales list in 1965. In Mar. 1966 Rapid carried out speed trials in the Solent in prospect of transfer from the Royal Navy, but at the time of going to press negotiations had not been concluded.

1966. Skyfotos

Disposals of Type 16
Of the seven Type 16 1st Rate fast anti-submarine frigates of the "T" class (limited conversion from destroyers). Teazer was on the disposal list in 1962, Tenacious, Termagant and Tyrian in 1963, and Tumult and Tuscan were listed for disposal by scrapping in 1965. Terpsichore was sold for scrap in 1966.

Disposals of Smaller "Type 16" Limited Conversions
Of the three fast anti-submarine frigates of the
Smaller "Type 16", Limited Conversion from Destroyers,
Paladin was on the disposal list in 1962, and Orwell
and Petard (ex-Persistent) were listed for disposal by
scrapping in 1965.

FRIGATES

2 "Loch" Class. 2nd Rate (Anti-Submarine Type)

Displacement:

1.575 tons standard (2.400 tons

Dimensions:

Guns: A/S weapons:

Machinery:

1,575 tons standard (2,400 tons full load)
286 (pp.), 297½ (w.l.), 307
(o.a.)×38½×14¾ (max.) feet
2—4 inch, 6—40 mm. AA.
2 Squid triple-barrelled depth charge mortars
Triple expansion. 2 shafts.
1.H.P.: 5,500=19·5 kts.
2 Admiralty 3-drum type
753 tons
9,500 miles at 12 kts.
124 to 140

Boilers: Oil fuel:

Radius: Complement:

General
Designed mainly for anti-submarine escort. Originally displaced 1,435 tons standard (2.260 tons full load). Loch Killisport has fibre glass shield on "A" gun. When modernised these ships were air-conditioned for service in the Persian Gulf. modernisas in the Persian Gulf.

Gunnery

Before modernisation they mounted 1—4 inch, 4—40 mm. AA, and 4—2 pdr. guns.

Transfers
Loch Ard, Loch Bolsdale and Loch Cree were presented to the South African Navy in 1944-45, and renamed Transvaal, Good Hope, and Natal, respectively, and Loch Achanalt, Loch Achray, Loch Eck, Loch Katrine, Loch Morlich and Loch Shin were sold to the Royal New Zealand Navy in 1948 and renamed Pukoki, Kanlere, Hawed, Rotolit, Tutira and Taupo, respectively. Loch Insh was transferred to the Royal Malaysian Navy in 1964 and renamed Hang Tuah.

Disposals
Loch Glendu and Loch Quoich were scrapped in 1957,
Loch Scavaig in 1958, Loch Tarbert in 1959, Loch Arkaig in
1960, Loch Dunvegan and Loch Killin in 1961, Loch Gorm in
1962. Loch Craggie, Loch Fyne, Loch More, Loch Ruthven,
Loch Tralaig and Loch Veyatie were on the sales or scrap
lists in 1963. Loch Alvie was scrapped in 1965 and Loch
Lomond was listed for disposal by scrapping in 1966.

Modified "Loch" Class Disposais
Woodbridge Haven (ex-Loch Torridon), built as a
"Loch" class frigate but converted into a Submarine
Depot and Repair Ship and reclassified as a Minesweeper
Support Ship in 1960, was broken up at Blyth in Support Shi Aug. 1965.

Aug. 1965.
Sister ship Derby Haven (ex-Loch Assynt) was transferred as a frigate to the Imperial Iranian Navy (Persia) in 1949 and renamed Babr (Panther).

Name

No.

Builders

Laid down

Launched

Completed 10 Apr.

LOCH FADA F 390 LOCH KILLISPORT F 628 John Brown & Co, Ltd., Clydebank Harland & Wolff Ltd., Belfast

8 June 43 28 Dec. 43 14 Dec. 43 6 July 44

45 9 July



LOCH FADA

Of the two Flag Frigates (Despatch Vessels) of the Modified "Loch-Bay" Type, Surprise (ex-Gerrans Bay, ex-Loch Carron) was scrapped in 1965 (towed from Portsmouth on 26 June to the shipbreakers' yard on the Firth of Forth); and Alert (ex-Dundrum Bay, ex-Loch Scamadale) was paid off in 1964 for disposal in due course.

Disposals of "Hunt" Type 1
Brocklesby, last survivor of the famous "Hunt" group in the Royal Navy (designed as "fast escort vessels", but rated as destroyers until 1947, when they were reclassified as anti-aircraft frigates) was paid off on 21 June 1963 (she had latterly been Sonar Trials and Training Ship) and listed for scrap in 1965,
Mendip, transferred to China in May, 1948, was returned to the Royal Navy a year later, but transferred to Egypt in 1949 and captured by Israel in 1956. Cottesmore was also transferred to Egypt is 1951.
Meynell and Quantock were purchased by Ecuador in 1955.
Liddesdale was discarded. Cotswold and Hambledon were

1955.
Liddesdale was discarded. Cotswold and Hambledon were used as artificial harbour at Harwich. Eglinton was scrapped in 1956, Blencathro, Cleveland, Fernle, Holderness, Pytchley and Southdown in 1957, Atherstone, Cattistock, Garth and Whaddon in 1958.

Berkeley, Exmoor, Quorn and Tynedale were Second World War losses.

For disposals of "Hunt" types 11, 111, and IV see later page and 1959-60 edition.

1964. Official

Disposals of "Bay" Class
Whitesand Bay was scrapped in 1956, Enard Bay and
Widemouth Bay in 1957, Carnarvon Bay, Cawsand Bay,
Largo Bay, Padstow Bay, St. Austell Bay, Start Bay,
Tremadoc Bay and Veryan Bay in 1958, Wigtown Bay in
1959, Cardigan Bay in 1961, and St. Brides Bay in

1959. Cardigan bey in the control of the control of

Disposals of "Black Swan" Class

Disposals of "Black Swan" Class
Woodcock was scrapped in 1955, Cygnet, Wild Goose,
Wren, Amethyst, Alacrity, Black Swan' in 1956 Hind, Magpie,
Nereide, Peacock and Sparrow in 1958, Opossum in 1960,
Modeste, Redpole and Snipe in 1961, Pheasant in 1963, Crane
in 1964, Starling was scrapped in 1965 (towed from Portsmouth on 6 July to be broken up at Sheerness).

Whimbrel was transferred to Egypt in 1949, Actoeon, Flamingo, Hart and Mermald were allocated to West Germany in 1957, and delivered in 1958 and 1959.

Erne was reduced to a hulk for Solent Division R.N.R. in 1952 and renamed Wessex, but reverted to name Erne in 1964 and listed for scrap in 1965.

Ibis and Woodpecker were Second World War losses,

MINESWEEPER SUPPORT SHIP (Ex-Fast Minelayer)

I "Manxman" Class

3,000 tons standard (4,000 tons full load) Displacement:

 $400\frac{1}{2}$ (pp.) 400 (w.l.), 418 (o.a.) \times 40 × 16 feet 6—40 mm. Bofors AA. (1 twin, Dimensions: Guns:

4 single) Much reduced from original 156 Mines:

capacity
Parsons geared turbines, 2 shafts.
S.H.P.: 36,000=26 kts. Machinery:

Boilers: Oil fuel: Radius: Complement: 5.H.P.: 36,000=26 kts.

2 Admiralty 3-drum type
750 tons
2.000 miles at 20 kts.
238 (11 officers, 227 ratings)

General
Built under the 1938 Estimates. Torpedoed by an enemy submarine and badly damaged in Nov. 1942.
Recommissioned after conversion on 23 Feb. 1963. The fast minelayers Abdiel, Latona, and Welshman, of this class were lost during the Second World War.

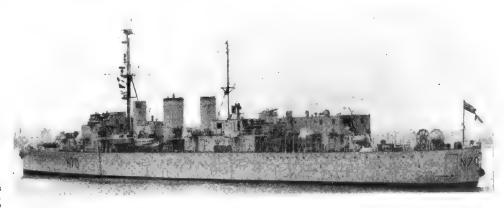
Conversion
Conversion
Converted into a Minesweeper Support Ship at H.M.
Dockyard, Chatham, at a cost of £1,000,000 to serve as parent ship for eight coastal minesweepers East of Suez.
Her four 4-inch guns forward were suppressed; and two ooilers forward were removed for the installation of additional generators and evaporators, her S.H.P. being halved; but her forward funnel was retained for use as a ventilator and for diesel exhaust trunking. Part of the mining flat was altered to take stores and spare minesweeping equipment. The stern mining doors are used for the exchange of sweeping gear.

Pennant No. Builders

Laid down

Completed Converted

MANXMAN N 70 Alex. Stephen & Sons Ltd., 24 Mar. 1939 5 Sep. 1940 20 June 1941 1960-1963 Govan, Glasgow



MANXMAN

Name

1966. Official

Photograph
A port broadside view of Manxman before conversion appears in the 1961-62 and 1962-63 editions.

Disposals
Of two sister fast minelayers Apollo was scrapped in 1962 and Arladne in 1963.



MANXMAN (after conversion)

1963, Wright & Logan

ICE PATROL SHIP (Ex-Netlayer)

I "Guardian" Class

Displacement: ,450 tons standard (4,250 tons

Dimensions:

3,430 tons surrous full load)
310 (pp), 338 (o.a.)×53×
15½ (mean load) feet
2—4 inch (twin mount), 4—20 mm. Oerlikon AA., 4—3 pdr. Guns:

Aircraft: Machinery:

mm. Oerlikon AA., 4—3 pdr. saluting 2 helicopters
British Thomson-Houston geared turbines. S.H.P.: 9,000=20 kts. 2 Admiralty 3-drum type 690 tons 238 Boilers:

Oil fuel Complement:

General Originally designed for netlaying and target towing. Ordered under the 1934 Estimates. The designed displacement was 2,860 tons standard, since increased. Conversion Refitted in 1955 for service in the Falkland Islands Dependencies with helicopter hangar, landing deck aft, enclosed bridge and enclosed look-out. The 4-inch guns were mounted forward instead of aft and 4—20 mm. were suppressed. Strengthened against ice, Employed in lieu of a frigate, as a guardship and Antarctic survey thip. Refitted in 1957 with remodelled bridge, etc. Refitted in 1958 with small tripod mainmast stepped on

Builders

Laid down

Completed

Converted

PROTECTOR A 146 Yarrow & Co. Ltd., Scotstoun 15 Aug. 1935 20 Aug 1936 31 Dec. 1936 10 May 1955



PROTECTOR

the hangar, and crane amidships, etc. Officially reclass-as Ice Patrol Ship in 1959, Refit annually since.

1965, Wright & Logan

Protector's original sister skip, the netlayer Guardian was disposed of in 1962.

Disposal of Landing Ship Headquarters
The Landing Ship Headquarters (Small), Meon, L 369, converted from the "River" class frigate, F 269, the last survivor in the Royal Navy of that numerous type, was paid off in July 1965 and was officially approved for disposal by scrapping in 1966.

Disposals

Sister ship Waveney, F 248, was scrapped in 1958.

"Castle" Class:—Amberley Castle, Pevensey Castle and Rushen Castle were sold to the Air Ministry as Weather Ships. Dumbarton Castle, Farnham Castle, Lancaster Castle, Morpeth Castle and Oxford Castle were scrapped in 1961.

"River" Class—Ballinderry was scrapped in 1961, and Derg in 1963.

"Hunt" Group:--"Brecon" Class (Type IV): Brecon

was scrapped in 1962 and Brissenden in 1965. "Albrighton" Class (Type III); Talybont was scrapped in 1961. "Blankney" Class (Type III); Wilton was scrapped in 1960, and Farndale in 1961.

Modified "Aberdeen" Class .- Fleetwood was scrapped

in 1959.

Detailed disposals of all ships of these classes since the Second World War, appear in the 1959-60 edition.

I "Colossus" Class (Former Aircraft Carrier)

Displacement:

13,350 tons standard (17,000 tons

Dimensions:

In José tons full load)
Length 630 (pp.), 650 (w.l.), 699 (o.a.), feet. Beam: 80 feet. Width: 112\frac{1}{2} (o.a.) feet. Draught: 23\frac{1}{2} feet. Flight deck: 690 feet long, 80 feet wide, 39 feet above water line.

Former hangar: Length: 445 feet. Width: 52 feet. Depth: 17½ feet

Aircraft: Guns: Machinery: Boilers:

Width: 52 feet. Depth: 17½ feet 3 helicopters in flight deck hangar 4—40 mm. AA., 3 saluting Parsons geared turbines, 2 shafts. S.H.P.: 40,000=24:25 kts. 4 Admiralty 3-drum type (400 lb. working pressure, 700 degrees maximum superheat) 3,000 tons 12,000 miles at 14 kts. Ship's company: 500 (27 officers, 473 ratings) plus Maintenance staff: 285 (15 officers, 270 ratings)

Oil fuel:

Radius: Complement:

Insulated for tropical service and partially air-contioned. When she was still an aircraft carrier her commodation was modified in 1953 to fit her for emoyment as officer cadets' training ship, but she was nverted into a heavy repair ship under the 1956-57 timates, and her sponsons removed. Commissioned for rise after conversion on 7 Jan. 1965. Sailed for ortsmouth on 1 Feb. 1965 for the Far East where she employed as an escort maintenance ship. ·neral

employed as an escort maintenance ship.

onversion

Her reconstruction spans a period of seven years, it the work actually took less time as her conversion as suspended for about 2½ years while dockyard comitments of higher priority were met. Although in-inded for heavy repair the special machinery in the omprehensive workshops for this in the former angar is placed in a state of preservation and her ain role is escort maintenance, but she has space and icilities to undertake a variety of tasks including the arrying and maintenance of helicopters. She can take year destroyers and frigates alongside, two on each eam. Cost of conversion: £10,200,000, including apital expenditure on the heavy repair plant carried of dockyard and expenses over a protracted period.

onstruction

As an aircraft carrier the flight deck was strengthened o take aircraft of over 8 tons in weight. Sponsons could

HEAVY REPAIR SHIP

Name TRIUMPH Pen. No.

108

A 108 (ex-R 16)

Builders

Laid down

Launched 2 Oct. 44

Completed 9 Apr. 46

Converted:

H.M. Dockvard. Portsmouth, 1 Jan. 58 to 7 Jan. 65



TRIUMPH

be dismantled to the extent of 3\frac{1}{2} feet on either side if necessary to allow for passage through Panama Canal. Mercantile type hull. Built to Lloyd's specifications up to main deck with the original intention of converting to commercial service after the war. Damage control: No great measure of vertical sub-division on the sandwich system as it was reckoned that it is better for ships to settle evenly in the event of damage and flooding than to foster capsizing.

Engineering

Engineer and boilers are arranged en echelon, one set of turbines and two boilers being installed side by side in each of the two main propelling machinery spaces, on the unit system, so that the starboard propeller shaft is longer than the port shaft. The maximum designed speed was 25 knots, at 225 revolutions per minute. The economical speed is 15 knots at 120 revolutions per minute. Vengeance was lent to the Royal Australian Navy early in 1953, but was returned to the Royal Navy in August 1955, and sold to the Brazilian Navy in 1956 (announced by Admiralty on 14 Dec.); she was modernised in 1957-1960 and commissioned in 1961 under the name Minas Gerals. Warrior was sold to the Argentine Navy in July 1958 and commissioned under the name Independencia in Jan. 1959.

Photographs

A photograph of Triumph before conversion appears in the 1938-59 and 1959-60 editions, and a photograph during conversion in the 1960-61 to 1964-65 editions.

Of Triumph's sister ships, Glory was broken up in 1961, and Ocean and Theseus in 1962. Half-sister Perseus, also Unicorn, were scrapped in 1958-59. (Unicorn arrived at Dalmuir on 15 June, 1959).

Disposals of "A" Class
Of the three "A" class heavy repair ships, converted from Cunard liners, Ausonia was sold to shipbreakers at Castellon de la Plana. Spain, in 1965 (towed from Portsmouth on 13 Sep.), Artifex (ex-Aurania) was scrapped at La Spezia in 1961, and Alaunia was scrapped in Sept. 1957.

Disposal of "R" Class

Disposal of "R" Class

The heavy repair ship Ranpura, former P. & O. liner, was approved to be scrapped in 1960, and was sold to Italian interests in Apr. 1961 for breaking up.



Appearance
Distinguished from aircraft carriers by generally lighter appearance, thin funnel, distinctive shape of ship's side forward, absence of sponsons, and block deckhouses on the former flight deck

deckhouses on the former flight deck Class
Of her original sister aircraft carriers, the Venerable (renamed Karel Doorman) was sold to the Royal Nether-lands Navy in 1948; Colossus (renamed Arromanches) was sold to the French Navy in 1951; and two were completed as maintenance aircraft carriers, Perseus (scrapped in 1958) and Ploneer (scrapped in 1954).

TRIUMPH

1965. Official

DEPOT SHIP DESTROYER

I "Tyne" Class

Displacement: Dimensions:

Machinery: Bollers: Oil fuel

Complement:

11,000 tons standard (14,600 tons full load)
585 (pp.), 613 (w.l.), 621 (o.a.)×66×201 feet
8-4'5 inch, 7-40 mm. AA.
Parsons geared turbines. 2 shafts.
5.H.P.: 7,500=17 kts.
4, of 3-drum type
1,400 tons
520 (normal) as destroyer depot ship, 820 as flagship. Accommodation allows for 1,000.

Name No.

TYNE

A 194

Builders Scotts' S.B. & Eng. Co. Ltd., Greenock Laid down

Launched

Completed

15 July 38 ' 28 Feb. 40 28 Feb. 41

General

Built under the 1937 Estimates. Equipment includes two furnaces, each capable of melting 500 lb. of metal at any temperature up to 1,500 degrees centigrade; a foundry and machine shops with milling and grinding machines. Refitted from late 1956 to early 1958 with enclosed lower bridge and improved operations room and internal arrangements, etc., seven 40 mm. guns replacing former smaller anti-aircraft guns. Was flagship of Home Fleet from Autumn 1954 to August 1956, and again from April 1958 to 1960. Also parent ship of the

2nd Submarine Squadron in 1960, and Flagship of the Flag Officer. Flotillas, Home Fleet, until Apr. 1961, when she became accommodation ship for Fleet Maintenance Units personnel at Portsmouth, from whence she was towed to Devonport on 18 July 1961 and placed in reserve and used as a living ship.

Disposal
The destroyer depot ship Woolwich was scrapped at Dalmuir in Oct, 1962.



SUBMARINE DEPOT SHIPS

I " Adamant " Class

Name Pennant No. Builders

Laid down

Launched

Completed

ADAMANT A 164 Harland & Wolff, Ltd., Belfast

18 May 1939

30 Nov. 1940 28 Feb. 1942

Displacement:

12,700 tons standard (16,500 tons

Dimensions:

Machinery:

full load) 620 (pp.), 646 (w.l.), 658 (o.d.) × 70½ × 21½ feet 12—40 mm. AA. (2 quadruple, 2 twin); 4—3 pdr, saluting Parsons geared turbines. 2 shafts, S.H.P.: 8,000 17 kts.

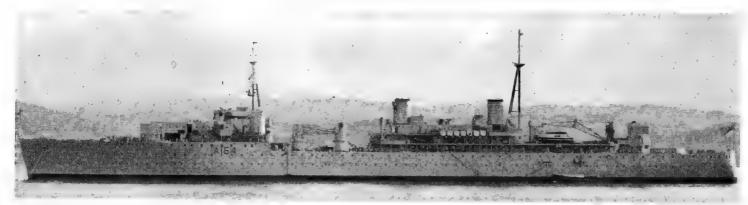
Boilers: Oil fuel: Complement:

of 3-drum type

2,600 tons 750 (ship's company, repair staff)

General
Ordered under the 1938 Estimates, Equipment includes
a foundry, fitters', patternmakers', coppersmiths', and

shipwrights' shops; light and heavy machine shops; torpedo and electrical shops; and submarine repair facilities of all kinds. When originally built she had facilities for nine submarines and accommodation for their complements. She has total accommodation for 800 officers and men of the ship and 550 from the submarines. Her eight 4-5 inch guns have been removed.



ADAMANT

1966, courtesy Dr. Giorgio Arra

Nuclear Powered Submarine Support Ships

2.44 Maidstone " Class

Displacement Dimensions:

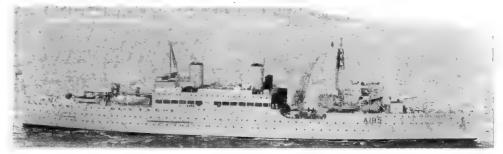
10,000 tons standard (13,000 tons) full load) 497 (pp.), 531 (o.a.) × 73 × 21‡

Guns:

feet 5 40 mm. AA. Bofors (see Gunnery)
Geared turbines (Brown Curtis in Forth, Parsons in Maidstone).
2 shafts. S.H.P.: 7,000=16 kts Machinery;

Boilers: Oil fuel Complement: 2 shafts. S.H.P.: 7,000=16 kts 4 Admiralty 3-drum type 2,300 tons 695 (45 officers and 650 ratings). Accommodation for 1,159 (119 officers and 1,040 men) normal and over 1,500 maximum

Launched Reconstructed John Brown & Co. Ltd., Clydebank 30 June 1937 A 187 11 Aug. 1938 14 May 1939 1962-1966 Brown & Co. Clydebank MAIDSTONE 17 Aug. 1936 A 185 21 Oct. 1937 5 May 1938 1958-1962



MAIDSTONE

1966 Official

General
Parent Ships for Submarines. Maldstone was ordered on 17 Aug. 1936 under the 1935 Estimates. She originally cost £993,000. Forth was laid down under the 1937 Estimates. Equipment includes a foundry, coppersmith's, plumbers' and carpenters' shops; heavy and light machine shops; electrical and torpedo repair shop; and plant for charging submarine batteries. Designed for looking after nine operational submarines, and capable of supplying over 140 torpedoes and a similar number of mines when required. Besides large workshops there are repair facilities on board for all material in the attached submarines, and extensive diving and salvage equipment is carried. There are steam laundry, cinema, hospital, chapel, two canteens, bakery, barber shops, fully equipped operating theatre and dental surgery. Maldstone was

the Flagship of the Commander-in-Chief Home Fleet from 16 Aug. 1956 until 31 Mar. 1958. Reconstruction

Ltd.

Reconstruction
Maldstone was extensively reconstructed in H.M.
Dockyard, Portsmouth in 1958-62 as a nuclear-powered
submarine support ship, with a lattice foremast and
additional superstructure amidships.

forth was similarly modernised and converted into a nuclear-powered submarine support ship in H.M. Dockyard Chatham, in 1962-66.

The conversion and modernisation of Maidstone included refitting for acting as parent ship for the nuclear-powered submarine Dreadnought.

Gunnery
As originally designed both ships mounted eight 4-5 inch guns in four twin housings, one forward, one aft, and

one sponsoned on either beam between the funnels, but these were removed during their conversion into nuclear submarine support ships. Maidstane formerly also had a light AA. gun in the bows, and she carried a 4-inch gun on a submarine pattern mounting, for training purposes only, on the starboard side just aft of the midships 4.5 inch turret.

Photographs
A starboard bow surface view of Maidstone before reconstruction appears in the 1960-61 and 1961-62 editions, and a larger port view, in the 1957-58 to 1959-60 editions. A port bow view after reconstruction appears in the 1962-63 edition, and a larger starboard broadside view in the 1963-64 to 1963-64 editions. A starboard broadside view of Forth before reconstruction appears in the 1960-61 to 1962-63 editions, and a starboard bow view in the 1963-64 to 1965-66 editions.



MAINTENANCE SHIPS

No.

I "Point" Class

Name

HARTLAND POINT A 262

18 July 1944 4 Nov. 1944 11 July 1945

Completed

Laid down



HARTLAND POINT

1963, Official

I "Mull" Class

8,500 tons standard (10,200 tons full load) 416 (pp.), $441\frac{1}{2}$ (o.a.) $\times 57\frac{1}{2}\times 20\frac{1}{4}$ feet 11—40 mm. AA. Triple expansion, I.H.P.: 2,500 = 10 kts.

Dimensions:

Machinery:

Oil fuel:

General

General Originally an Armament Maintenance Ship, and subsequently a Repair and Accommodation Ship. Converted into a minesweeper Maintenance Ship (conversion completed in Aug. 1961). Based at Singapore in Oct. 1961. Her original sister ship Mull of Galloway (ex-Kinnaird Head) was scrapped in 1965. (towed from Portsmouth on 16 Feb. and broken up at Hamburg).

All these maintenance ships have over 2,000 tons of permanent ballast for stability and immersion purposes.

Name

No

Builders

Builders

Burrard Dry Dock, N. Vancouver

Laid down

Launched Completed

MULL OF KINTYRE A 225 North Vancouver Ship Repairs Ltd.

21 Dec. 1944 5 Nov. 1945 5 Apr. 1945

MULL OF KINTYRE

1962, Official

3 "Head" Class

9,000 tons standard (11,270 tons full load)
416 (pp.), 441½ (o.a.)×57½×
22½ feet
11—40 mm. AA. (Berry Head and Rame Head)
Triple expansion, I.H.P.: 2,500
=10 kts.
2 Foster-Wheeler
1 600 tons Displacement:

Dimensions:

Machinery:

Boilers:

Boilers: 2 Foster-Wheeler
Oil fuel: 1,600 tons
General
Escort Maintenance Ships, Berry Head (see photograph in the 1953-54 to 1961-62 editions) and Rame
Head were refitted and modernised in 1960-63.
Duncansby Head (see photograph in the 1962-63 edition) on 1 Dec. 1962 became "half" of H.M.S.
Cochrane (Senior Officer Reserve Ships, Rosyth) as a living ship jointly with GIrdleness (see below). In 1963
Rame Head became a living ship (Senior Officer Reserve Ships, Portsmouth).

Ships, Portsmouth).

Beachy Head and Flamborough Head of this class belong to the Royal Camadian Navy, having been acquired in 1952 and 1951, respectively, and renamed Cape Scott and Cape Breton.

Suilders Laid down Launched Completed North Vancouver Ship Repairs 15 June 1944 Burrard Dry Dock, N. Vancouver 29 July 1944 Burrard Dry Dock, N. Vancouver 12 July 1944 A 191 A 158 A 134 21 Oct. 1944 17 Nov. 1944 22 Nov. 1944 30 May 1945 DUNCANSBY HEAD 8 Aug. 1945 18 Aug. 1945



RAME HEAD

1963, Wright & Logan

Completed

I Converted "Ness" Class

10,000 tons standard (11,620 tons full laod) as converted 416 (pp.), $441\frac{1}{2}$ (o.a.) \times 57 $\frac{1}{2}$ \times 22 $\frac{1}{2}$ feet Triple expansion, 1 shaft. I.H.P.: 2,500=10 kts. Displacement: Dimensions:

Machinery:

General

General Former Landing Craft Maintenance Ship converted to a guided weapons trials ship in H.M. Dockyard, Devonport, Oct. 1953—July 1956, mounting a triple launcher for "Seasing" missiles forward, and accommodating 616 officers and ratings. For particulars of guided weapon installation see 1961-62 edition. Paid off as guided missiles trials ship on 5 Dec. 1961. Reclassified as an accommodation ship in 1962; and with Duncansby Head (see above) recommissioned at H.M. Dockyard, Rosyth, on 1 Dec. 1962 under the joint administration name of M.M.S. Cochrane to take over the functions of the naval barracks and base supply depot at Donibristle. Her original sister ship Buchan Ness was scrapped in 1960.



Burrard Dry Dock, N. Vancouver

Launched

7 Dec. 1964 29 Mar. 1945 5 Sep 1945



GIRDLE NESS

Giorgio Arra

New Construction

3 "Hecla" Class

Displacement: Dimensions: Aircraft: Machinery:

2,800 tons (official figure)
235 (pp.), 260 (o.a.) > 49 > 15 feet
I Wasp helicopter
Diesel-electric. I shaft.
Bow thruster. 3 Davey Paxman
Ventura 12-cyl. turbo-charged Vform diesels. B.H.P.: 3,840. I
electric motor. S.H.P.: 2,000 14 krs.

Radius: Complement:

14 kts. 12,000 miles at 14 kts. 117 (19 officers and scientists, 98 ratings)

General

General

New dual purpose deep ocean survey ships for the Royal Navy. The first to be designed with a combined oceanographical and hydrographical role, and the first to be built on commercial lines without a supplementary naval function. Of merchant ship design and similar in many respects to the Royal Research ship Discovery, they have range and endurance to fit them for their specialised work. The hull is strengthened for navigation in ice, and a propeller built into a transverse tunnel in the bow for good manoeuvrability. The forcend of the superstructure incorporates a Landrover garage and the after end a helicopter hangar with adjacent flight deck. Equipped with chartroom, drawing office and photographic studio; two laboratories, dry and wet; electrical, engineering and shipwright workshops,

Displacement:

Dimensions;

Guns: U.W. weapons: Aircraft: Machinery:

1,940 tons standard (2,200 tons full load)
297 (pp.), 315 (o.a.)×40×11 (forward), 13 (aft) feet
4—3 pdr. saluting
Depth charges
1 helicopter
4 diesels, 2 shafts, B.H.P.: 4,200
=15 kts. (see Engineering)
164 (14 officers, 150 ratings)

Complement:

General
Design figures for displacement were 1,565 tons standard and 1,885 tons load, but in fact she turned out heavier. Designed by the Royal Navy from the start for hydrographic surveying and chart production. First survey ship to be equipped with a helicopter flight deck and a hangar, designed to enable a helicopter to land on and fly off for air survey photography and transport of personnel to shore observation stations. Air conditioning plant is installed to meet equatorial and polar climatic conditions. The ship carries three survey motor launches equipped with echo sounding apparatus. First British naval vessel to be built equipped from the beginning for cafeteria messing. Cost £1,345,000. Refitted with enclosed bridge in 1961, but the bridge wings were left open. Again refitted in 1962.

Displacement:

Dimensions:

Boilers: Oil fuel Radius: Complement:

Electrical

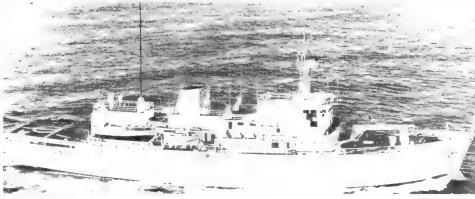
The latest electronic aids to surveying and navigation are incorporated. Electrical power is provided from 360 kw. 220 volt direct current diesel generating sets.
Helicopter Operation

The after end of the forecastle deck extension is a

I "Dampier" Class (ex-Frigate)

SURVEY SHIPS

Name	No.	Builders	Laid down	Launched	Completed
HECATE HECLA HYDRA	A 137 A 133 A 144	Blythswood S.B. Co. Ltd., & Yarrow Blythswood S. B. Co. Ltd. & Yarrow Yarrow & Co. Ltd., Scotstoun	23 Oct. 1964 6 May 1964 14 Aug. 1964	31 Mar. 1965 21 Dec. 1964 14 July 1965	19 Dec. 1965 8 Spet. 1965 4 May 1966
				A CONTROL OF THE CONT	



HECLA

and large storerooms. Capable of operating independently of shore support for long periods. High standard of habitability, with library, canteen, laundry, cinema, and hospital. Air conditioned throughout. Ordered from

1966, Official Yarrow & Co. Ltd., Scotstoun, in Feb. 1964 (Blythswood Shipbuilding Co. Ltd., Glasgow, collaborating on two of the three hulls). Hecla was laid down at the Blythswood yard

No. Builders Laid down Launched Completed VIDAL A 200 H.M. Dockyard, Chatham 5 July 1950 31 July 1951 29 Mar. 1954



1964, Skyfotos

1966, Official

VIDAL

landing apron for the helicopter, which is housed in the after deck house hangar on the same level. Engineering

The main propelling machinery was designed in H.M., Dockyard, Chatham. The four ASR 1 diesels drive two

shafts through reverse and reduction gear boxes.
Each engine is of the 12 cylinder vee unsupercharged type with a rating of 1,050 h.p. at 920 r.p.m.
Appearance
Funnel and fore bridge are pearshaped in pian.

DAMPIER A 303

Builders Completed Laid down Launched 7 Aug. 1944 15 May 1945 6 June 1948 Smith's Dock Co. Ltd., (ex-Herne Bay, ex-Loch Eil) South Bank-on-Tees



1,600 tons standard (2,230 tons full load)
286 (pp.), 297 (w.l.), 307 (o.a.) ×
38½ × 14½ feet
4-3 pdrs. (and 2 D.C.T.)
Two 4-cylinder triple expansion.
2 shafts. I.H.P.: 5,500 - 19-5 kts.
2 Admiralty 3-drum type
580 tons
10,000 miles at 10 kts.
149 (14 officers, 135 ratings) General General
Modified frigate of the "Bay" Class. Completed at H.M.
Dockyard, Chatham. Equipped with radar and sonar.
Refitted with an enclosed bridge in 1961.

Electrical

Power at 220 volts D.C., is from two 120 kw. steam-turbine and two 150 kw. diesel generators.

Disposals
Of three sister ships Cook (ex-Pegwell Bay, ex-Loch Mockrum) was listed for disposal by scrapping in 1965, Owen (ex-Thurso Bay, ex-Loch Muick) was officially approved for disposal by scrapping in 1966, and Dalrymple (ex-Luce Bay, ex-Loch Glass) was sold to Portugal in Apr. 1966 and renamed Alfonso de Albuquerque.

Disposals of "Scott" Class
Of the four smaller survey ships (ex-fleet minesweepers)
of the "Scott" class, Franklin and Seagull were scrapped in

1956 and Shackleton (ex-Sharpshooter), and Scott were broken up in 1965. (Scott was towed from Portsmouth to

the West of Scotland Shipbreaking Co., Troon, on 30 June 1965.

New Construction Coastal Survey Ships

"Fawn" Class

FAWN BEAGLE BULLDOG FOX

PORCUPINE

PELICAN

Displacement: Dimensions:

500 tons approx (official figure) 200 feet

Dimensions:

General

A new class of coastal survey ships planned for the charting and re-charting of shallow waters. Designed for duty overseas, working in pairs. Fown and Fox are to replace the coastal minesweeper conversions, but the construction of the other four appears to have been postponed.

The names originally allocated were Albacore, Albatross, Barracouta, Bulldog, Fawn and Fox, but three of these names were changed in 1965.

Conversion Former Coastal Minesweepers "Ton" Class

MERMAID (ex-Sullington) MYRMIDON (ex-Edderton) WATERWITCH (ex-Powderham) WOODLARK (ex-Yaxham)

Displacement:

360 tons standard (420 tons full load) 153 (o.a.) 28½ 85 feet Diesels. 2 shafts. B.H.P.: 3,000— 15 kts. 26 (3 officers, 23 ratings)

General
After conversion into survey ships these two former coastal minesweepers of the "Ton" class commissioned for service on 17 and 20 July 1964, respectively, for hydrographic work in home waters. See photographs at bottom of next page.

Conversion Former Inshore Minesweepers "Ham" Class

Displacement:

Dimensions: Machinery:

|20 tons standard (160 tons full load) | $107\frac{1}{2}$ (o.a.) \times 22 \times 5 $\frac{1}{2}$ feet Diesels. 2 shafts. B.H.P.: 1,100=

14 kts. 18 (2 officers, 16 ratings) Complement:

General Former inshore minesweepers of the "Ham" class converted to replace the old survey motor launches Meda and Medusa for operation in inshore waters at home. See photograph of Woodlark (ex-Yaxham) at the bottom of Col. 1, Page 305.

COASTAL MINESWEEPERS

75 "Ton" Class

ALVERTON (ex-Thames, ex-Alverton)
APPLETON
ASHTON
BEACHAMPTON
BELTON
BEVINGTON
BILDESTON
BLAXTON
BOSSINGTON (exfmbleton) ex-Alverton) Embleton)
BRERETON (ex-St. David, ex-Brereton) ex-Brereton)
BRINTON
BRONINGTON (ex-Humber,
ex-Bronington)
BURNASTON

CALTON CHILCOMPTON CHAWTON CLARRESTON CLYDE (ex-Amerton, ex-Mersey, ex-Amerton) CONISTON CROFTON CURZON (ex-Fittleton)

DARTINGTON DUFTON

FISKERTON Displacement: Dimensions: Guns: Machinery

Oil fuel: Radius: Complement: FLOCKTON GAVINGTON GLASSERTON HICKLETON HIGHBURTON HOUGHTON HUBBERSTON ILMINGTON INVERMORISTON IVESTON KEDLESTON KELLINGTON KELLINGTON

KELLINGTON
KEMERTON
KILLIECRANKIE (exBickington, ex-Curzon,
ex-Bickington)
KILMOREY (ex-Alfriston, exWarsash, ex-Alfriston)
KIRKLISTON (ex-Kilmorey,
ex-Kirkliston)
LETTERSTON
LEVERTON
LEVERTON
LEVERTON
MADDISTON
MAXTON
MARYTON
MERSEY (ex-Pollington)

MARYTON
MERSEY (ex-Pollington)
MONKTON (ex-Kelton)
MONTROSE (ex-Dalswinton)

VENTURER (ex-Hodgeston ex-Northumbria, ex-Hodgeston) WALKERTON WARSASH (ex-Boulston) WASPERTON WISTON WILKIESTON WOLLASTON YARNTON Dalswinton)
360 tons standard (425 tons full load)
140 (pp.), 153 (o.a.) ×. 28½ × 9½ feet
1—40 mm. AA. (removed in some), 2—20 mm. AA. (Sheraton has 2—40 mm.)
2 diesels. 2 shafts. B.H.P.: 2,500 (Mirrlees), 3,000 (Deltics)
= 15 kts. (max.) See Engineering

45 tons 2,300 miles at 13 kts. 27 (minehunters 5 officers, 31 ratings)

General

These were a new type with double mahogany hull and constructed of aluminium alloy and other materials with the lowest possible magnetic attraction to attain the greatest possible safety factor when sweeping. John I. Thornycroft & Co. Ltd., Southampton, were the "parent" firm for the group which built this class of uniform design capable of sweeping both contact and influence type mines and dealing with mines operated magnetically and acoustically. The first, Coniston, was completed in Feb. 1953; she has Vosper stabilisers, and the whole class are being so fitted. Stubbington was built with fibre-glass bottom. Fittleton was remodelled.

Disposals

Disposals

Badminton, Carlampton, Caunton, Derriton, Fenton, Floriston, Kildarton, Laleston, Rennington, Repton, Rodington, Sefton, Tarlton and Wotton were on the disposal list in 1966



SHAVINGTON (open bridge, lattice mast)

1965, Dr. Giorgio Arra



SHOULTON (Minehunter)

1963, Wright & Logan

Edderton and Sullington of this class were converted into survey ships in 1964 and renamed MYRMIDON and MERMAID, respectively. See previous page and photographs below.



Coastal Minesweepers-continued

Nomenclature

NORTHUMBRIA (ex-

ex-Nurton)

PENSTON

UPTON

Quainton)
NURTON (ex-Montrose.

PENSTON
PICTON
PICTON
PUNCHESTON
ST. DAVID (ex-Crichton, ex-Clyde, ex-Crichton)
SANTON
SHAVINGTON
SHAVINGTON
SHOULTON
SOBERTON
STUBBINGTON
THAMES (ex-Buttington, ex-Venturer, ex-Buttington)
UPTON

VFNTURER (ex-Hodgeston

Nomenclature

Named after villages with the suffix "ton". Since 1954 some have been renamed on being allocated to the Royal Naval Reserve, taking the traditional names associated with the divisions (see below). Ships are not permanently attached to one division; on becoming due for refit they revert to their original names and might then be re-allocated to a different division or return to general service. The former Royal Navy and Royal Naval Reserve names are shown in parenthesis above. Engineering

Engineering

High speed diesels, standardised to simplify maintenance. The earlier vessels had Mirrlees diesels, but most of the later units had Napier Deltic light weight diesels. Highburton, the first with Deltic diesels was accepted on 21 Apr. 1955. Most early ships have undergone conversion from Mirrlees to Deltic diesels. The generators for electrical power are in separate engine rooms. Three-bladed propellers, 6 ft. diameter, 400 r.p.m.

Appearance
Ashton, Chawton, Dilston, Dumbleton, Fiskerton, Houghton, Lewiston, Mersev
(ex-Pollington), Nurton, Puncheston, Quainton, Repton, Sheraton, Soberton, Stubbington, Walkerton, Wilkieston, Wiston and others are fitted with an enclosed or
frigate bridge and tripod mast. Appleton and Shoulton covered bridge.

Minehunting
Shoulton was fitted with unique mine-hunting equipment, an all-British Sonar development which enables her to locate and classify any mine-like objects on the sea bed with accuracy and range previously impossible. Since them Bronington, Iveston, Kirkliston, Sheraton and others have been or are being refitted as minehunters.

Fishery Protection
Of this class Belton, Soberton, Wasperton and Wotton constituted a division of the Fishery Protection Squadron

Transfers
Dunkerton and Hazleton were transferred to South Africa in 1955 and renamed Pretoria and Koopstod, respectively, Durweston, Overton, Whitton and Wennington to India in 1956, and renamed Kakinada, Karwar, Connamore and Cuddolore, respectively. Castleton, Chilton, Dumbleton, Oakington, Packington and Stratton to South Africa in 1958-59 and renamed Johannesburg, East London, Port Elizabeth, Mosselbaai, Walvisbaai and Kimberley, respectively, with Durban and Windhoek. Darlaston was sold to Malaysia in 1960 and renamed Mahamiru, Hexton in 1963 and renamed Ledang, Dilston and Essington in 1964 and renamed Igrai and Kinabalu, respectively, and Lullington and Thankerton in 1966 and renamed Tahan and Brinchang, respectively. Alcaston, Chediston, Jackton, Singleton, Somerleyton and Swanston were transferred to Australia in 1962, and renamed Snipe, Curlew, Teal, Ibis, Hawk, and Gull, respectively, Aldington to Ghana in 1964 and renamed Ejura.

Royal Naval Reserve Units Eleven units are renamed and attached to Royal Naval Reserve Division Head-quarters as follows (Division under Name):—

Curzon Sussex Clyde Clyde St. David Warsash Solent Montrose Tay Venturer Mersey Severn Killiecrankie Forth Wales Mersey London Northumbria Tyne Kilmorey Ulster

(The Humber Division was disbanded in 1958 and H.M.S. Humber reverted to her original



1965, Wright & Logan



LEWISTON (frigate bridge, tripod mast)

1963. Official

Photographs
A photograph of Coniston appears in the 1953-54 to 1957-58 editions, of Appleton in the 1954-55, 1955-56, 1958-59 and 1959-60 editions, of Bildeston in the 1954-55 and 1955-56 editions of Boulston in the 1955-56 to 1957-58 editions, of Dufton in the 1956-57 and 1957-58 editions, of Mersey (Amerton) in the 1956-57 edition, of Higherton in the 1957-58 edition, of Higherton in the 1958-59 and 1959-60 editions, of Houghton in the 1959-60 edition, of Wilkreston in the 1960-61 edition, of Hickleton and Monkton in the 1960-61 to 1964-65 editions, of Wolverton in the 1961-62 to 1964-65 editions, and of Burnaston in the 1963-64 and 1964-65 editions.



MYRMIDON (ex-Edderton) see previous page 1965, Wright & Logan

MERMAID (ex-Sullington) see previous page

INSHORE MINESWEEPERS

22 "Ham" Class M 2601 M 2701 and M 2777 Series

ARLINGHAM BIRDHAM BUCKLESHAM DITTISHAM DOWNHAM ELSENHAM EVERINGHAM	PAS RNXS TRV TRV TRV TRV PAS	FLINTHAM FORDHAM FRITHAM HAVERSHAM LASHAM ODIHAM PAGHAM	TRV DGV TRV TRV TRV RNXS RNXS	PORTISHAM PUTTENHAM SHIPHAM THAKEHAM THATCHAM TONGHAM WARMINGHAM WOLDINGHAM	
--	--	---	---	---	--

120 tons standard (159 tons full load) 2601 Series: 100 (pp.), $106\frac{1}{2}$ (o.a.) $\times 21\frac{1}{4}\times 5\frac{1}{2}$ feet 2701 Series: 100 (pp.), 107 (o.a.) $\times 21\frac{1}{2}\times 5\frac{1}{2}$ feet 2777 et seq.: 100 (pp.), $107\frac{1}{2}$ (o.a.) $\times 22\times 5\frac{1}{2}$ feet 1—40 mm. Bofors AA. or 1—20 mm. Oerlikon AA, forward (see Gunnery) 2 Paxman diesels. B.H.P.: 1,100=14 kts. max. (9 kts. sea speed) see Engineering 15 tons Displacement: Guns: Machinery: Oil fuel: Complement: 15 tons 15 (2 officers, 13 ratings)

General
Designed to operate in shallow waters, rivers and estuaries. When built they were an entirely new type of vessel embodying novel features resulting from lessons learned during the war and in course of subsequent developments. Named after villages with the suffix "ham". The first inshore minesweeper, Inglesham, was launched by J. Samuel White & Co. Ltd., Cowes, on 23 Apr. 1952. The 2701 series were of wooden construction, whereas the 2601 series were of composite construction. All the M 2701 series had a rubbing strake, unlike the M 2601 and M 2001 series.

DGV:—Converted to Degaussing Vessels.

PAS: Employed in the Port Auxiliary Service.

RNXS:—Adapted for the Royal Naval Auxiliary Service.

TRV:—Converted to Torpedo Recovery Vessels.

Gunnery
Most of the M 2601 series had the 40 mm. gun replaced by a 20 mm. gun. All the M 2701 series had a 20 mm. gun (armament as minesweepers).

Engineering
The main machinery was manufactured by Davey Paxman & Co. Ltd., Colchester, or by Ruston & Hornsby Ltd., Lincoln, Foden Ltd., Sandbach, Cheshire, or Ransomes, Sims and Jeffries Ltd., Ipswich, under licence from Davey Paxman. Three-bladed propellers, 600 r.p.m.

Nomenclature Fordham was originally to have been named Pavenham.

Photographs

A photograph of Altham appears in the 1957-58 and 1958-59 editions, of Chillingham in the 1958-59 and 1959-60 editions, of Darsham in the 1959-60 edition, and of Woldingham in the 1960-61 to 1964-65 editions.



POLSHAM

1963, Official

Auxiliary Service
The following were adapted for the Royal Naval Auxiliary Service:—Birdham, Odiham, Pagham, Portisham, Puttenham, Shipham, Thakeham, and Arlingham, Everingham, Tongham and Woldingham were employed in the Port Auxiliary Service.
Bucklesham, Dittisham, Downham, Elsenham, Flintham, Frithham, Haversham and Lasham were converted for service as Torpedo Recovery vessels.
Fordham, Thatchham and Warmingham have been converted into Degaussing Vessels to replace the older degaussing vessels of the converted MMS 1001 type.

Coastal Command Range and Recovery Vessels
Chelsham and Bottisham were transferred to the R.A.F. in 1966 for service at Plymouth
as Coastal Command range and recovery vessels. They were numbered HMFA 5000 and
HMFA 5001, discarding their former names.

Powderham and Yaxham were converted into inshore survey craft in 1964 on similar lines to the "E" class, see page 309 and renamed WATERWITCH and WOODLARK, see page 303.



WOODLARK (ex-Yaxham)

Added 1965, Wright & Logan

Inshore Minesweepers-continued

"Ham" Class-continued

Transfers
Frettenham, Isham, Kingham, Mersham, Mileham, Petersham, Pineham, Rendlesham, Riplingham, Sparham, Stedham, Suham, Tibenham, Wexham and Whippingham were transferred to France in 1954-55; Hildersham and Littlesham to India in 1955 and remaned Bimlipitan and Bassein, respectively; Bassingham to East Africa on 25 June 1958, but returned on 9 Oct. 1961; Bedham to Malaysia in 1958 and renamed Lanka Suka; Cardingham and Etchingham to Hong K.N.V.R. in 1959; Altham, Asheldham and Brantingham to Malaysia in 1959 and renamed Sri Johar, Sri Perlis and Temasek, respectively; Malham and Ottringham to Ghana at the end of 1959, and renamed Yogodo and Afadzato respectively; and Harpham and Greetham to Libya in 1963; Boreham and Felmersham to Malaysia in 1966 and renamed Jerong and Todak, respectively.

Disposals
Bisham and Edlingham, damaged by fire on 29 Sep. 1956, were scrapped in 1959. Bassingham, Blunham, Bodenham, Brigham, Chillingham, Cranham, Halsham, Inglesham, Mickleham, Popham, Pulham, (renamed Isis while attached to London R.N.R.), Rampisham (renamed Squirrel while on Fishery Protection), Reedham, Sidlesham, Tresham, Wintringham and Wrentham were on the disposal list in 1964. Cobham, Damerham, Darsham, Davenham, Glentham and Hovingham were listed for disposal by scrapping in 1965, Abbotsham, Georgeham, Ledsham, Ludham, Neasham, Nettleham, Rackham, Sandringham, Saxlingham, Shrivenham and Thornham were officially approved for disposal by scrapping in 1966. Ockham and Polsham are also on the scrap list.



ODIHAM

Added 1964, J. W. Kennedy

4 "Ley" Class. BREARLEY

M 2001 Series

DINGLEY

ISIS (ex-Cradley)

123 tons standard (164 tons full load)
100 (pp.), 107 (o.a.)×21½×5½ feet
1—40 mm. AA. or 1—20 mm. AA. forward
2 Paxman diesels. B.H.P.: 700—13 kts.
15 tons
15 (2 officers, 13 ratings) Displacement: Dimensions: Guns: Machinery: Oil fuel:

Complement:

AVELEY

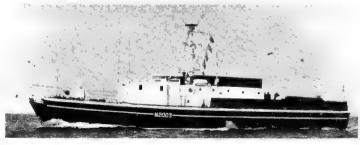
General
The "Ley" class differ from the "Ham" class. They are of composite (non-magnetic metal and wooden) construction, instead of all wooden construction. Their superstructure and other features also differ considerably. They have no winch and sweeping gear, as they are mine hunters, not sweepers. They have smaller engines as less towing power is needed. Brearley is attached to the Britannia Royal Naval College.

Photographs

A photograph of Aveley appears in the 1954-55 edition, of Watchful in the 1959-60 to 1962-63 editions, and of Squirrel in the 1964-65 and 1965-66 editions.

Royal Naval Reserve
Cradley was allocated to the London Division R.N.R. in 1963 and renamed Isis, relieving Pulham (renamed Isis from 1956 to 1963 while in London R.N.R.).

Disposals
Broadley, damaged by fire on 29 Sep. 1956, was scrapped in 1959. Brenchley and Brinkley were for disposal by scrapping in 1965. Chailey was on the Sales List in 1965. Squirrel and Watchful (originally named Burley and Broomley, respectively, until allocated to Fishery protection in 1960 and 1958) were approved for disposal by scrapping in 1966.



BREARLEY

1966, Wright & Logan



DINGLEY

1965, Skyfotos

MINELAVERS

I New Construction

ABDIEL

circa 1,200 tons standard (official figure) 200 \times 40 \times 10 feet (approx.) Davey Paxman diesels, Speed over 15 kts. 70 Displacement
Displacement
Dimensions:
Machinery:
Complement:

General

General Exercise minelayer for the Royal Navy ordered in June 1965 from John I. Thornycroft & Co. Ltd., Woolston, Southampton. Laid down on 23 May 1966. Main machinery manufactured by Davey Paxman, Colchester. Her function will be in support of mine countermeasure forces, in laying exercise mines and the maintenance of these forces when they are operating away from their shore bases. She will replace a number of aging vessels now employed on this work.

I Coastal Type

PLOVER

Displacement:
Dimensions:
Machinery: 805 tons standard (1,020 tons full load) 180 (pp.), 195 $\frac{1}{4}$ (o.a.) \times 37 $\frac{1}{2}$ \times 10 feet Triple expansion. I.H.P.: 1,400 – 14.75 kts. Complement: 69

General

General
Designed and built as a coastal minelayer, Pennant No. N 26. Built by Wm. Denny & Bros. Ltd., Dumbarton. Laid down on 7 Oct. 1936. Launched on 8 June 1937 Completed in Sep. 1937. Formerly employed as minelaying tender to the Torpedo and Anti-submarine School in H.M.S. Vernon. Refitted in 1955 when the mainmast was stepped, the radar cabinet on the flag deck removed, and the radar aerial erected on the roof of the bridge. Her original two machine guns were removed. Now employed in the Portsmouth Squadron under the administration of the Commander-in-Chief.

Photographs

Photographs
A large port bow surface view appears in the 1956-57 to 1959-60 editions, a larger star-board quarter oblique aerial view in the 1959-60 edition, a starboard aerial view in the 1960-61 to 1962-63 editions and a starboard broadside surface view in the 1963-64 to 1965-66



PLOVER

1966, Skyfotos

CONTROLLED MINELAYERS

5 "Miner" Class

Name	Pennan	t N	o. Laid do	wn	Launched	Completed
GOSSAMER (ex-Miner II) MINER III BRITANNIC (ex-Miner V) MINER VI STEADY (ex-Miner VII)	Ex-N	16	22 Dec. 18 Jan. 22 Apr. 22 Apr 31 Mar.	39 40 41	16 Nov. 3 2 Nov. 4 7 Feb. 4	9 19 Jan. 40 9 16 Mar. 40 0 26 June 41 2 30 May 42 4 31 Mar. 44

Displacement: Dimensions: Machinery:

General All built by Philip & Son Ltd., Dartmouth, and all engined by Ruston & Hornsby Ltd., Lincoln. Gossamer is an experimental torpedo trials vessel and is no longer capable of minelaying. Miner Y was converted into a cable lighter and renamed Britannic in 1960. Miner III was adapted as a stabilisation trials ship at Portsmouth and renamed Steady in 1960. Miner III is a tender for Clearance Diving Teams attached to H.M.S. Vernon shore establishment. Miner VI was torpedo recovery vessel in Malta for the Fifth Submarine Division until it was withdrawn from the Mediterranean in Aug. 1964.

Photographs
Larger photographs of Miner V and Gossamer (aerial view) appear in the 1957-58 and earlier editions. A large photograph of Miner VI appears in the 1958-59 and 1959-60 editions, and another in the 1960-61 to 1962-63 editions. A port broadside view of Miner III appears in the 1963-64 to 1965-66 editions.

Disposals
Of the "Miner" class, Miner IV and Mindful (ex-Miner VIII), formerly tender to the experimental submarine Explorer, were sold for scrap in 1965. Minstrel (ex-Miner I), formerly accommodation ship for the experimental submarine Excalibur, was listed for disposal by scrapping in 1965 and Miner VI (see above) in 1966.
The controlled minelaying trawler Redshank was scrapped in 1958. The controlled minelayer Penyu was disposed of in 1959.
The controlled minelayer Linnet was sold for scrap in 1964.



MINER III

1966, courtesy Dr. Giorgio Arra

TANK LANDING SHIPS

I LST (A) Type

STRIKER (ex-LST (A) 3516)

2,140 tons light (5,000 tons full load)
330 (pp.), 347½ (o.a.) × 55 × 4¾ (forward), 12 (max.) feet
4—40 mm. Bofors AA. forward; 8—20 mm. Oerlikon AA.
Triple expansion. 2 shafts, i.H.P.: 5,500=13 kts. (10 kts.
cruising)
2 Admiralty 3-drum type
1,400 tons
152 officers and ratings Displacement: Dimensions: Guns: Machinery:

Oil fuel: Complement:

General
Could carry 10 tanks plus 15 vehicles. Converted to LST (A) in 1956. Stiffened to carry heavy tanks. All the "Empire" named LTSs have no armament.

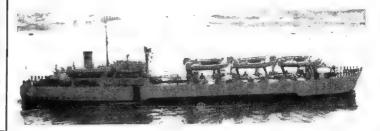
Class
LST (3) 3001, 3009, 3201, 3024, 3028, 3037 and 3509 were transferred on charter to the War Office, and LST (3) 3010, Empire Cymric, LST (3) 3041, Empire Doric, LST (3) 3507, Empire Gaelic, LST (3) 3512, Empire Celtic, LST (3) 3519, Empire Baltic and LST (3) 3534, Empire Cedric were on commercial charter through the Ministry of Transport but were available for recall in emergency. LST (3) 3002, 3007, 3020, 3503 and 3506 were transferred on loan to the Royal Hellenic Navy. LST 322 was returned from the Royal Hellenic Navy in May 1953.

Transpers
When commercially chartered Battler became Empire Puffin (lent to the Ministry of Transport and subsequently disposed of). Pursuer became Empire Tern, St. Nazaire became Empire Skua, Slinger became Empire Kittiwake, Thruster became Empire Peter Promso became Empire Gannet and LST (3) 3033 became Empire Shearwater (lent to the Ministry of Transport).

Nomenclature
All the "Empire" names above were given to LSTs taken over by the Ministry of Transport and Civil Aviation at the time of the Suez action in 1956.

DISPOSAIS

Bruiser was stricken in 1959, Empire Cedric, Empire Doric and Vagso were scrapped in 1960, Puncher and Ravager were scrapped in 1961, Chaser, designated as a submarine support ship in 1958, was for disposal in 1962, Empire Baltic, Empire Celtic, and LST (3) 3033 were scrapped in 1962. LST (3) 3031 was a fender ship in 1963. Anzio was approved for disposal by scrapping in 1964.



STRIKER

1963, A. & J. Pavia

3 LST (3) Type

DIEPPE (ex-LST (3) 3016)

STALKER (ex-LST (3) 3515) TRACKER (ex-LST (3) 3522)

Displacement: Dimensions: Guns: Machinery:

2,140 tons light (4,820 tons full load)
330 (pp.), $347\frac{1}{2}$ (o.a.) × $55\frac{1}{4}$ × $4\frac{3}{3}$ (forward), 12 (max.) feet 8-20 mm. Oerlikon AA.
Triple expansion. 2 shafts. I.H.P.: 5,500 · 13 kts. (10 kts.

cruising)
2 Admiralty 3-drum type
1,400 tons
115 officers and ratings. Boilers: Oil fuel: Complement:

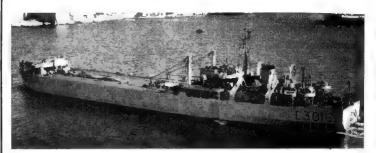
General Stalker was designated as a submarine support ship in 1958. Lofoten, designated as a harbour accommodation ship in 1958, was converted into the Royal Navy's first helicopter support ship in 1964 (see later page). Tracker, designated as a harbour accommodation ship in 1958, was converted into a net and boom carrier in 1964. Smiter was wrecked off Lagos on 25 Apr. 1949.

Transfer
Sister ship Avenger was transferred to the Indian Navy in 1949 and renamed Magar.

Nomenclature

Nomenciature
When commercially chartered Charger became Empire Nordic, Fighter became Empire Grebe, Hunter became Empire Curlew, Trouncer became Empire Gull, Trumpeter became Empire Fulmar and Walcheren became Empire Guillimot, Attacker was renamed Empire Cymric on commercial charter in 1954.

Searcher was scrapped in 1949, Reggio, Solerno and Suvia in 1960, and Hunter in 1962. Zeebrugge, employed as a harbour accommodation ship since 1958, was placed on the disposal list in 1963.



DIEPPE

Added 1960, A. & J. Pavla

Tank Landing Ships-continued

I LST (C) Type

NARVIK (ex-LST (C) 3044)

Displacement: Dimensions:

Guns: Machinery: Boilers

2.256 tons light (4,980 tons full load) 330 (pp.), 345 (o.o.) \times 54 \times 4½ (forward), 12½ (max.) feet (Beaching draughts) 10 20 mm. Oerlikon AA. Triple expansion. 2 shafts. I.H.P.. 5,500=13 kts. 2 of the three-drum type 1,400 tons

Oil fuel: Complement:

General
Could carry I LCT, 5 LCA, 15 40-ton tanks, 15 trucks. Norvik was flagship of the task force for the nuclear test in Monte Bello Islands in 1956. Her disposal in 1960 was reconsidered and she was fitted out as a submarine support ship at Chatham to relieve the submarine depot ship forth serving the First Submarine Squadron in the Mediterranean and as accommodation ship at Malta. She is now accommodation ship for technical officers and ratings at the Polaris base at Faslane until permanent quarters ashore are completed. Her sister ship Messing took part in the nuclear test at Christmas island in 1956-58, and was converted to an LST (A) in 1960 for service in the Amphibious Warfare Squadron.

Photographs
A larger photograph of Narvik appears in the 1952-53 to 1959-60 editions, and a port bow view in the 1961-62 and 1962-63 editions.

Disposals
Messina (ex-LST (C) 3043) was approved for disposal by scrapping in 1966.

Disposals of "Ben" Class
Of the two LST (Q) type tank landing ships, Ben Nevis was listed for disposal by scrapping in 1965, and Ben Lomond was sold out of the Service in 1960.



NARVIK

1963, A. & J. Pavia

TANK LANDING CRAFT 12 LCM (9) Type

LCM (9) 3507

LCM (9) 3508

Displacement: Dimensions:

Capacity: Machinery:

75 tons light (176 tons loaded) 85 (o.a.) \times 21½ \times 5½ feet 2 battle tanks or 100 tons of vehicles 2 Paxman diesels. 2 shafts B.H.P.: 550-10 kts.

General

LCM (9) 3507 and LCM (9) 3508 were the first operational minor landing craft to be built since the Second World War. Ramped in the traditional manner forward, a completely enclosed radar-fitted wheelhouse is positioned aft. Upon completion they carried out familiarisation trials to perfect the new techniques required in launching and recovering LCMs from the flooded sterns of the parent assault ships.

Construction

The prototype, L 3507, was laid down in Apr. 1962 and accepted on 19 Mar. 1963. L 3508 was begun in May 1962 and handed over on 6 June 1963. Both built by Vosper Ltd., Portsmouth. Ten more of these craft have since been built, six by Richard Dunstan Ltd., Thorne, and four by Brook Marine Ltd., Lowestoft.

Design

A new type of Landing Craft Mechanized for operation with the Assault Ships recently built for the Royal Navy. Designed by Vosper Ltd. in collaboration with the Royal Navy. The design was evolved as the result of the most exhaustive tank trials ever carried out on a landing craft. Scale models were made and operated by remote control in the Admiralty Experiment Works test tank at Haslar, using simulated wave conditions to prove the design in the roughest possible sea conditions, resulting in a design incorporating new standards of landing craft stability.

Engineering
The Davey Paxman diesels are of the A6YHXAM type, the shafts being geared by a Veedrive to enable the propulsion machinery to be placed as far aft as possible, an arrangement which provides a clear well deck for tanks and heavy transport carried in the new assault ships.

steering
Fitted with Kort rudders, which consist of a swivelling ring surrounding each of the two propellers and which replace conventional rudders. The Kort rudders produce more precise steering and control when going ahead or astern. The ring enclosing each propeller also provides protection when beaching in shallow water during disembarkation or recovery of tanks and heavy transport.

Disposals of LCT (4)s

LCT (4) 404 (ex-1231), LCT (4) 405 (ex-523) and LCT (4) 407 (ex-1106) were scrapped in 1960. LCT (4) 403 (ex-1220) LCT (4) 406 (ex-941) and LCT (4) 408 (ex-1202) were for disposal with LCT (4) 1247 and LCT (4) 1283, on the sale list.) LCT (4) 1312 was sold to Nigeria in 1959 and renamed Lekoja.



L 3507 1963, courtesy Vosper Ltd., Portsmouth (Builders)

Tank Landing Craft-continued

15 LCT (8) Type

AACHEN L 4062 ABBEVILLE L 4041 AGEDABIA L 4085 AGHEILA L 4002

BASTION L 4040

Displacement: Dimensions:

Machinery:

AKYAB (ex-Rampart) L 4037 ANDALNES L 4097 ANTWERP L 4074 ARDENNES L 4073

AREZZO L 4128 ARAKAN L 4164 ARROMANCHES L 4086 AUDEMER L 4061

CITADEL L 4038

PORTCULLIS L 4044

657 tons light, 895 to 1,017 tons loaded 225 (pp.). 231½ (o.o.) × 39 × 2½ (forward), 5 (aft) feet (Beaching draughts) 4 Paxman engines. B.H.P.: 1,840 = 12.6 kts. (9 kts. cruising) 33 to 37.

General Akyab, Bostion and Redoubt have lattice mast (see photographs). Akyab has deckhouse forward, Citadel and Portcullis were to have been converted to Fleet Degaussing vessels. LCT (8) 4002 (Agheila), 4037 (Akyab, ex-Rampart), 4041 (Abbeville), 4061 (Audemer), 4062 (Aachen), 4073 (Ardennes), 4074 (Antwerp), 4085 (Agedabia), 4086 (Arromanches), which has a large lattice mast forward, 4097 (Andalnes). 4128 (Arezzo) and 4164 (Arakan) were transferred to the War Office.

Photographs

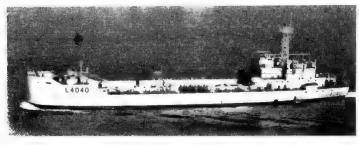
Photographs appear of Redoubt in the 1956-57 to 1959-60 editions, and of Arromanches in the 1960-61 and 1961-62 editions.

Disposals LCT (8) 4042, 4045, 4050, 4148, 4156 and 4165 were stricken from the list in 1958, and 4025, 4049, 4063 and 4098 in 1960. LCT (8) 4063, Jawada, on loan to a commercial company, was for disposal at Bahrein. Redoubt and Sallyport were listed for disposal by scrapping in 1965. Counterguard was sold to Malaysia in 1965 and renamed Sri Langkawi. Buttress was sold to France in July 1965 and renamed L 9061. Parapet was sold to La Société Maseline Ltd. (Merchants), Sark, in 1966. Bastion, lying at Bahrain as Tender, is for disposal.



AKYAB, ex-Rampart (deckhouse forward)

1965, Dr. Giorgio Arra



BASTION

Added 1962, A. & J. Pavla

11 MRC (Ex-LCT)

CANA (MRC 1109)

MEDWAY (MRC 1110)

SIMBANG (MRC 1100)

General Maintenance and Repair Craft, former Tank Landing Craft, Cana, rated as Naval Servicing Craft (Engineering) was in Singapore reserve, now for disposal. Medway (see photograph on page 280) rated as Submarine Support Ship, was base ship at Singapore, Seventh Submarine Division, until relieved by Forth in 1966. Simbang, nominal depot ship, R.N. Air Station, Singapore. Also MRC 1013, 1015, 1023, 1097, 1098, 1119 (for disposal), 1120, and 1413 (ex.-LCT (E) 413) used as a power and workshop, Malta, MRC 1122 was sold to Ghana in July 1965 and renamed Asuantsi.

5 LCM (7) 7,000 Series (and NSB)

Displacement: Dimensions: Machinery:

28 tons light (63 tons loaded) $60\frac{1}{4} \times 16 \times 3\frac{3}{4}$ feet B.H.P.: 290= 9-8 kts.

General Nos 7016, 7037, 7087, 7100, 7104. Three are employed as naval servicing boats and store carriers: 7037 (NSB 351), 7100 (NSB 359), 7104 (NSB 358). Some of the LCM (7) type were re-engined with Gray Marine diesels.

40 LCVP 100 Series and 1,000 Series

Displacement:

8.5 tons light (13.5 tons full load) LCVP (ex-LCA (2)s 11.5 tons light (16 tons full load) 41½ LCVP (2)s. 43 \times 10 \times 2½ feet B.H.P.: 130 8 kts. LCVP (2)s: 2 Foden diesels. B.H.P.: 200=10 kts. Dimensions: Machinery:

General There are 38 LCVP (2)s Nos. 101 to 146 and 2 LCVP (1)s, Nos. 1485 and 1700 There were also a number of variations and prototypes of about the same length (43 feet). Paiding Landing Craft, including LCR 5507 and 5508, and Navigational Landing Craft, including LCN 604 (ex-LCR 5505). LCA (1) 1275, 1330, 1481, 1485, 1644, 1678, 1705, 1712, 1733, 1745, 1779 and 1787 were for disposal in 1961, eleven more in 1963, and 1272, 1543, 1639, 1972 and 1981 in 1964. LCVP (2)s carried by Intrepid and Feorless can carry 35 troops or 2 Land Rovers. Crew 4. LCA (2)s were redesignated LCVPs (Landing Craft Vehicle and Personnel) in 1966.

4 LCP (L) and LCP (L) 3. 500 Series

Displacement: Dimensions: Machinery:

6.5 tons light (10 tons loaded) 37 \times 11 \times 31 feet B.H.P.: 225 12 kts.

There are 2 LCP (L)s, Nos. 556 and 559, see details above, and two LCP (L) 3s. Nos. 502 and 503. Aurora gas turbines were installed in LCP (L) 3 No. 502.

FAST PATROL BOATS

2 "Brave" Class. (Gas Turbine Type Convertible Torpedo Gunboats)

BRAVE BORDERER P 1011

BRAVE SWORDSMAN P 1012

Displacement:

89 tons standard (114 tons full load)
90 (w.l.), 96 (hull), 98% (o.a.) × 25½ × 7 (aft)
As M.G.B.: 2 40 mm. single Bofors guns in power operated mountings, 2 21 inch side launched torpedoes.
As M.T.B.: 4—21 inch side launching torpedoes, and 1—40 mm. single Bofors gun
3 Bristol Marine Proteus 1,250 gas turbine propulsion units and jets. 3 shafts. S.H.P.: 10,500 over 50 kts. (on trials). Fixed pitch propellers 1,700 r.p.m.
25 tons Dimensions:

Machinery:

25 tons 20 (3 officers, 17 ratings); 22 as Senior Officers' Ship of a Squadron (3 officers, 19 ratings) Fuel capacity:

General

General
Fast Patrol Boats' (Medium), convertible gunboats and torpedo boats, intermediate between the "Bold" and "Dark" classes. Built by Vosper Ltd., Portsmouth. The hull is framed in welded aluminium with double skinned planking of mahogany and sheathed with glass fibre below the waterline. An hydraulic operated flap fitted on the transom maintains the running trim. Very beamy in relation to length, the ratio being less than 1:4 only. Brave Borderer, was launched on 7 jan. 1958 and accepted on 26 jan. 1960. Cost. £680,000. Brave Swordsman was launched on 22 May 1958 and was handed over on 20 July 1960. Cost. £640,000.

on 26 Jan. 1960. Cost: £880,000. Brave Swordsman was launched on 22 May 1958 and was handed over on 20 July 1960. Cost. £640,000. Engineering

Powered with Proteus Gas Turbines, originally designed for aircraft use, but adapted for marine purposes by Bristol Siddeley Engines Ltd., Filton, in association with W. H. Allen, Sons & Co. Ltd., Bedford, who supplied the primary reduction gears and the reverse reduction gearboxes. Rover Gas Turbines driving Metro-Vickers 40 kw, generators provide electrical power. No diesel machinery, Both Proteus and Rover turbines run on diesel fuel. Authorised maximum rating of Proteus is 3,500 S.H.P. and maximum continuous rating 2,800 S.H.P. A striking feature is that with the primary reduction gearbox the Proteus gives one H.P., for every 0.83 lbs. of its weight, and including the reverse reduction gearbox, one H.P. for every 1.6 lbs. of its weight. Designed for offensive operations against enemy warships and merchant ships in coastal, inshore and shoas waters, where high speed is essestial. The propellers are relatively small and of high speed. This was a novel and unusual feature resulting from Joint research carried our by the Royal Navy and Vosper Ltd. using the firm's cavitation tunnel. Gas turbines give an increase of 35 per cent in total power combined with a reduction of 50 per cent in machinery and a saving of 25 per cent in machinery space.

Electrical
The electrical system incorporates experimental light weight equipment designed
and installed by Vosper Ltd., to make an overall contribution to weight reduction.
The generator units comprise two Rover gas turbines, each of 40 kilowatts.

The generator units comprise the horse position of the design studies were carried out by Vosper with Royal Navy departments and co-ordinated by the Director General, Ships, whose extensive research facilities were available at all stages in design. Both craft underwent extensive evaluation trials and the design proved to be very satisfactory.

Armament
The originally designed armament, functioning as Motor Gun Boats, comprised one 3:3 inch turret mounted gun specially developed for these craft, with a stabilisation system capable of dealing with the motion experienced in such high speed craft. With the 3:3 inch gun was one 40 mm. gun and two 21 inch torpedoes. Functional in addition to the stabilisation of the stabilisation and the stabilisation of the stabilisatio

In addition to their roles as gunboats or torpedo boats these craft can also be employed as minelayers or high speed raiding craft for Commandos. Experimental

Experimental
Both were initially in the Coastal Forces Trials and Special Service Squadron, based at H.M.S. Dolphin II, formerly H.M.S. Hornet, shore headquarters at Gosport.
Fishery Protection
In Aug. 1962 both were attached to the Fishery Protection Squadron in British waters to achieve greater surprise in areas where poaching was likely, a role for which with their high speed they are eminently suitable.
Photographs
Photographs as torpedo boats (carrying four torpedoes) appear in the 1960-61 to 1962-63 editions (Brave Borderer) and 1961-62 and 1962-63 editions (Brave Swordsman).

Disposite of "Bold" Clare"

Disposals of "Bold" Class
Bold Pathfinder was disposed of in 1962 and Bold Ploneer in 1958.



BRAVE BORDERER

1964. Skyfotos



BRAVE SWORDSMAN 1963, Official

Fast Patrol Boats-continued

5. "Dark" Class (Convertible Motor Torpedo Boats and Motor Gunboats)

DARK ADVENTURER P 1101 DARK HERO P 1115 DÆRK HUSSAR P 1112
DARK GLADIATOR P 1114 DARK INTRUDER P 1118

Displacement: Dimensions:

50 tons standard (70 tons full load)
67 (w.l.), 71½ (o.a.)×19½×3½ (mean), 6½ (max.)
As M.G.B.: 1—4·5 inch gun, 1—40 mm. AA. gun (or
2—40 mm. AA. guns)
As M.T.B.: 4—21 inch torpodo tubes, 1—40 mm. AA.
Rocket flare launchers and depth charge chutes were
also fitted Armament:

also fitted
2 Napier Deltic diesels. S.H.P.: 5,000=46 kts. (designed), 35 to 37 kts. sea speed Machinery:

Fuel capacity Complement: 8 tons

General

General

Of composite construction, aluminium alloy being used for the framing and decl.

Hulls are painted black. Cost £325,000 to £338,000 each. These diesel engined craft, completed in 1954-58, brought to a close the era of petrol engined boats in coastal forces. They were of newer design, had more power, mounted a better armament and were generally more reliable.

were generally more reliable. Engineering
A new design of diesel machinery which for its power was the lightest unit so far designed. The Napier Deltic, an opposed piston two-stroke engine, of high performance, constructed in triangular form with three crankshafts, an arrangement new to engineering. It was designed and developed for the Royal Navy by D. Napier & Son Ltd., London, on behalf of their parent company, the English Electric Company Ltd. The engine develops 2,500 S, H.P. at 2,000 r.p.m. The engine and reverse gear weighs only 10,500 lbs, and therefore gives one H.P. for every 4.2 lbs, of its weight. This is the best power-weight ratio ever achieved in a marine diesel. All power is provided by diesel machinery. A Foden FD, 4 two-stroke diesel drives the 35 kw. auxiliary generator set and bilge pump.

Functional
In addition to their roles as gunboats or torpedo boats these craft can also be em-

In addition to their roles as gunboats or torpedo boats these craft can also be employed as minelayers (see photograph of Dark Antagonist above).

Experimental
Unlike the earlier craft which were of composite wood planking on aluminium framing. Dark Scout, the last of the 18 boats, built by Saunders-Roe (Anglesey) Ltd., Beaumaris, was of all-welded aluminium throughout. The huli was of hard chine form, developed to give good seagoing qualities combined with high maximum and cruising speeds.

Class
Five vessels of the "Dark" type were purchased by Burma, and two by Finland.

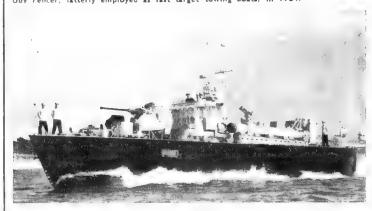
Photographs
Photographs appear of Dark Hussar in the 1959-60 edition, of Dark Adventurer
(as gunboat) in the 1955-56 to 1958-59 editions, of Dark Rover (as torpedo boat)
in the 1957-58 edition, and of Dark Agressor in the 1955-56 and 1956-57 editions.

Cancellation
The construction of the 19th boat of the class, Dark Horseman, was abandoned.

Disposals

Following the decision in 1957 to take nearly all fast patrol boats out of commission, nine new boats of the "Dark" Class, Dark Aggressor, Dark Antagonist, Dark Avenger, Dark Biter, Dark Buccaneer, Dark Clipper, Dark Invader, Dark Killer and Dark Rover were to be disposed of. But on 20 Dec. 1960 it was stated that the Navy had not abandoned coastal forces altogether. A nucleus had been kept alive of three boats in the fast Special Service Squadron (two "Braves" and one "Bold") so that the art would not be lost, and nine boats of the "Dark" class were in operational reserve, therefore preserving the foundations on which the forces could be rapidly expanded if they were needed. Actually, however, of the 18 boats of the "Dark" class only Dark Aggressor, Dark Hunter and Dark Scout have been disposed of. Dark Antagonist, Dark Avenger, Dark Biter, Dark Buccaneer, Dark Invader, Dark Killer and Dark Rover were on the Scrap List in 1965. Dark Clipper, Dark Righter and Dark Introduced Clipper, Dark Hero and Dark Hussar were in reserve, for disposal. Dark Intruder was operational in 1966.

Disboals of "Gay" Class
Gay Brulser, Gay Centurion, Gay Dragoon and Gay Forester were on the sales
list in 1961. Gay Archer, Gay Bombardler, Gay Bomman, Gay Caribineer and Gay
Cavaller were on the disposal list in 1963, and Gay Charger, Gay Charloteer and
Gay Fencer, latterly employed as fast target towing boats, In 1964.



DARK HIGHWAYMAN

1960. Wright & Logan



DARK ANTAGONIST (carrying 6 ground mines)

ENTERPRISE A 71

SEAWARD DEFENCE BOATS

17 "Ford" Class

ABERFORD P 3102 AXFORD P 3103 BECKFORD P 3104 BRYANSFORD P 3106 CAMBERFORD P 3107

Displacement: Dimensions:

Guns: A/S weapons: Machinery:

DROXFORD P 3113
DUBFORD P 3119
GIFFORD P 3111
GREATFORD P 3109
HINKSFORD P 3116 ISS KINGSFORD P 3121 MARLINGFORD P 3122 MAYFORD P 3114 MONTFORD P 3124 SHALFORD P 3121 TILFORD P 3123 120 tons standard (160 tons full load)
110 (pp), 117½ (o.a.)×20×5 feet
1—40 mm. Bofors AA. (none in lckford)
Shalford: Squid triple-barrelled depth charge mortar aft
Others: D.C. rails and large and small D.C.
Davey Paxman diesels. Foden engine on centre shaft.
B.H.P.: 1,100=18 kts. (max.), 15 kts. sea speed

Oil fuel: Complement:

General

Designed to detect, locate and destroy submarines, including midget submarines, in the approaches to defended ports. All built in 1953-57. Modern electronic equipment, depth charge release gear and flares. Comprehensive electrical installations, Pilford, launched on 21 Nov. 1956 by Vosper Ltd., Portsmouth, has main machinery manufactured by Ransomes, Sims & Jeffries Ltd., Ipswich, under licence from Davey Paxman & Co, Ltd., Colchester, and Fodens Ltd., Sambach, Cheshire.

Photographs
Aberford in 1957-58 to 1959-69 editions, Hinksford in 1960-61 to 1962-63 editions.

Transfers

Transfers

Broyford was sold to South Africa in 1954 and Glassford in 1955. Desford was transferred to Ceylon in 1955. Elmina and Komenda were built for Ghana in 1962.

Royal Naval Reserve
Dubford attached to Clyde Division, Greatford to Sussex Division, Beckford and Kingsford transferred to Mersey and Clyde divisions, respectively, in Dec 1964

23 tons



ICKFORD

1963. Official



SHALFORD (squid aft)

1961, Official

ICEBREAKER

TERRA NOVA

Displacement:
Dimensions:
Guns:
Aircraft:
Machinery:

7,000 tons (approx.) official figure 260×64×30 feet 4—3 pdr. 2 Wasp helicopters 4 diesel-electric. 2 shafts. H.P.: 15,000±16 kts.

General Plans for the Royal Navy's first icebreaker, to have been named after Captain Scott's lamous ship, have been shelved by the Government. Tenders for design and construction were invited from shipbuilding firms on 6 Apr. 1964, but with the Defence Review the vessel never proceeded beyond the design stage and no definite order for re-construction was placed. She was to have replaced H.M.S. Protector, the Royal Navy's only Ice Patrol Ship. Terra Nova was to have combined the tasks of patrol, survey and scientific support, with hull all-welded and designed for breaking thick ice, stabilisation system to reduce rolling, heeling tanks to enable the ship to be "rocked" free should she become wedged in thick ice, machinery controlled directly from the bridge and ship conned from several positions, fitted with extensive laboratories and deck equipment to be used in oceanographic work and hydrographic surveys in Antarctica, and hangar and flight deck aft serving helicopters carried to assist in survey work, transport scienists and equipment to bases, and reconnoitre for passage through icefields.



TERRA NOVA

1964. Official

INSHORE SURVEY CRAFT

3 "E" Class

ECHO A 70 EGERIA A 72 Displacement:

Dimensions: Machinery:

100 (pp.), $106\frac{1}{2}$ (o.a.) \times 22 \times 5 feet 2 Paxman diesels. 2 shafts. Controllable pitch propellers. B.H.P.: 700 -14 kts. (max.), 12 kts. (normal) 15 tons

Oil fuel: Complement: 15 tons 18 (2 officers, 16 ratings)

General

General Echo. the first Inshore Survey Craft, was launched by J. Samuel White & Co. Ltd., Cowes, on I May 1957, and commissioned on 12 Sep. 1958. Egeria was built by Wm. Veathernead & Sons Ltd., Cockenzie, and Enterprise by M. W. Blackmore & Sons Ltd., Bideford, Of all-wood construction with glued laminated members. Echo's main machinery manufacturers were Davey Paxman & Co. Ltd., Colchester. No armament; but was fitted with a 40 mm. gun for trials (see photograph above) and retains her gun seat. In wariime she could be used as an armed inshore minehunter on which her design was based. All built for coastal and harbour hydrographic surveys around the British Isles. Ability to navigate in shoal water, to obtain depths and detect wrecks on the sea bed, and to fix the position with accuracy. Equipped with two echo sounding machines and sonar for wreck location, and survey equipment for triangulation ashore. Modern radar, wire sweep gear, echo sounding launch, and modern chart room.

Photographs

A larger photograph of Esho, without armament appears in the 1959-60 edition.



ECHO (as built with gun)

Added 1960, Official

HELICOPTER SUPPORT SHIPS

I New Construction

ENGADINE

Displacement: circa 8,000 tons (official figure)
Dimensions: 424 (o.a.) x 58 feet

General

A new helicopter support ship was projected under the 1964-65 Navy Estimates. Under construction by Henry Robb Ltd., Leith. Officially named on 15 Sep. 1966 (high winds caused postponement of the launching ceremony). Largest ship so far to be built by the company. Intended for the training of helicopter crews in deep water operations company. Intende against submarines



ENGADINE (artist's impression)

1966 Official

1 Converted Ex-LST (3) Type

LOFOTEN (ex-LST (3) 3027) K 07

Displacement: 2.140 tons light (4,820 tons full load)
Dimensions: 330 (pp.), 347 (o.a.)×55½×12 (max.) feet
Machinery: Triple expansion. 2 shafts. I.H:P.: 5,500=13 kts.
Boilers: 2 Admiralty 3-drum type

General

Formerly a tank landing ship and latterly a harbour accommodation ship. Converted to an interim helicopter support ship in 1964 (commissioned on 23 June). The Royal Navy's first helicopter support ship, Specially selected for economy and simplicity of conversion, her upper deck was stripped and reinforced to provide a miniature flight deck, and helicopter support facilities installed. Can carry up to six Wessex helicopters. She provides an important forward position and her helicopters are able to operate at greater ranges from their main support base. She constitutes a valuable trial ship in which the lessons learned in operation will be useful in the projected conversion of the "Tiger" class cruisers as helicopter carriers and in the construction of the new helicopter support ship. Photographs

A larger photograph of Lofoten, L 3027, a port bow oblique aerial view showing helicopter on board, appears in the 1964-65 edition.



LOFOTEN (first helicopter support ship)

1965. Official

3 New Construction Stores Support Ships (AFS)

Displacement:

Aircraft: Machinery: Complement

circa 16,500 tons laden (official figure) 524 (o.a.) × 72 feet Facilities for helicopters Wallsend-Sulzer 8-cyl. RD.76 diesel. B.H.P.: 12,000 = 20 kts. 184

Complement: 184
General
Ordered on 7 Dec. 1964. Designed by Swan Hunter & Wigham Richardson Ltd., Wallsendon-Tyne to meet specific requirements. One ship being built on the Clyde by associates Barclay Curle & Co. and two ships on the Tyne. All fitted with Sulzer type main machinery remotely controlled, and auxiliary machinery manufactured by Wallsend Slipway & Engineering Co. Ltd. Lifts and mobile appliances provided for handling stores internally, and a new replenishment at sea system and a helicopter landing platform for transferring loads at sea. A novel feature of the ships is the use of closed circuit television to monitor the movement of stores. All air-conditioned. Lyness was launched on 7 Apr. 1966, and Stromness on 16 Sep. 1966.



LYNESS

1966 Official

2 New Construction Replenishment Ships.

REGENT

RESOURCE

Displacement: Displacement:
Dimensions:
Aircraft:
Guns:
Machinery:
Complement:

19,000 tons full load (deep departure)
640 (o.a.) × 77‡ feet
1 Wessex helicopter embarked
2—40 mm. Bofors (single)
Steam turbines (by Associated Electrical Industries)
119 R.F.A. service and Merchant Navy officers and ratings;
52 Navy Department industrial and non-industrial civil servants; 11 Royal Navy (1 officer and 10 ratings) for helicopter flying and maintenance.

General

General It was officially announced on 24 Jan. 1963 that two 19,000-ton replenishment ships would be ordered. On 13 Aug. 1963 the builders were named: Scotts' Shipbuilding & Engineering Co., Greenock; and Harland & Wolff, Belfast. They have lifts for armaments and stores, and helicopter platforms for transferring loads at sea. Designed from the outset as Fleet Replenishment Ships (previous ships have been converted merchant vessels). Air conditioned. Resource was launched at Greenock on 11 Feb. 1966. Regent was launched at Belfast on 9 Mar. 1966.



RESOURCE

1966, Official

I Air Stores Support Ship

RELIANT (ex-Somersby) A 84

54
13,730 tons
9,290 tons deadweight (summer)
440 (pp.), 468½ (σ.α.)×61½×26¼ feet
Doxford diesel. B.H.P.: 8,250=18 kts.
110 officers and men Displacement: Measurement: Dimensions:

Complement:

Complement: 110 officers and men
General
Bull by Sir James Laing & Sons Ltd., Sunderland. Engined by Hawthorn Leslie.
Completed in 1954. Former grain carrier which traded for two years, working between the Gulf of Mexico and the United Kingdom, before purchase from the Ropner Shipping Company. Converted for her now role at North Shileds. Sailed from Chatham on 4 Nov. 1958 for the Far East as the Royal Navy's first air/victualling stores issuing ship capable of replenishing aircraft carriers at sea. Has an endurance of 50 days' steaming at 16 knots, and carries 40,000 different patterns of aircraft spares and general naval stores. Has six holds and the latest automatic tensioning winch for transfer of stores to aircraft carriers in unfavourable weather. Fully airconditioned for service in the tropics, Her conversion was based on the concept that aircraft carriers should be able to spend more time at sea, independent of shore bases. Originally named Somersby. Renamed Reliant in 1958. As refitted she has a helicopter landing platform built over the poop deckhouse with netting surrounds.



RELIANT

1963, Official

Fleet Supply Ships-continued

2 Fleet Replenishment Ships.

RESURGENT (ex-Changchow) A 280

P) A 280 RETAINER (ex-Chungking) A 329 14.000 tons (approx.) official estimate Resurgent, 9.403 tons gross. Retainer, 9.393 tons gross 451 (pp.). 477½ (o.a.)×6.2×29 (max.) feet Doxford diesel. 1 shaft. B.H.P.: 6,500=15 kts.

Displacement: Measurement: Dimensions: Machinery: Oil fuel:

General

General
Former passenger and cargo motor vessels, both built for the China Navigation Co. by Scotts' Shipbuilding and Engineering Co. Ltd., Greenock, and completed in 1951 and 1950, respectively, Retainer was formerly a passenger and cargo liner along the China coast. She was purchased in 1952 and converted into a naval storeship during autumn 1954-April 1955 by Palmers Hebburn Co. Ltd., where further conversion was carried out Mar.-Aug. 1957 to extend her facilities as a stores ship, including the fitting out of holds to carry naval stores, the installation of lifts for stores, the provision of extra cargo handling gear and new bridge wings, Resurgent was taken over on completion for employment as a fleet replenishment ship.



RESURGENT

1966, courtesy Dr. Ian S. Pearsall



RETAINER

Added 1966 Wright & Logan

load)

6 "Fort" Class

FORT CHARLOTTE A 236 FORT DUQUESNE A 229 FORT DUNVEGAN A 160 FORT LANGLEY A 230 FORT ROSALIE A 186 FORT SANDUSKY A 316

3,700 tons light, 9,788 tons normal (14,000 tons full

Measurement: Dimensions: Machinery: Boilers:

10,300 tons deadweight 416 (pp.), 4241 (w.l.), 4411 (o.d.)×57×27 feet Triple expansion. I.H.P.: 2,500-11 kts. 2 Babcock & Wilcox

General

All launched in 1944. Fort Charlotte and Fort Dunvegan are Stores Support Ships.

Fort Duquesne (helicopter landing platform aft) is an Air Stores Support Ship.

Fort Langley. Fort Rosalie and Fort Sandusky are Armament Support Ships. Rated as Royal Fleet Auxiliaries. Similar in type to the Maintenance Ships of the "Mull" and "Head" Classes, see earlier page.

A photograph of Fort Duquesne appears in the 1953-54 to 1958-59 editions.

Fort Beauharnois and Fort Constantine were stricken from the list in 1963.



FORT SANDUSKY

1966, A. & J. Pavia



FORT DUNYEGAN

1960, Tom Molland Ltd.

FLEET REPLENISHMENT OILERS

3 "Olynthus" Class

Ňn Builders

OLEANDER A 124 Swan Hunter & Wigham Richardson, Wallsend OLNA A 123 Hawthorn Leslie (Shipbuilders) Ltd., Hebburn OLYNTHUS A 122 Hawthorn Leslie (Shipbuilders) Ltd., Hebburn 28 July 10 July

33,200 tons full load (official figures)
22,300 tons deadweight
610 (pp.), 648 (o.a.) × 84 × 34 feet
2 Wessex helicopters (can carry 3)
Pametrada double reduction geared turbines S.H.P.: 26,500 = Displacement: Measurement: Dimensions:

Aircraft: Machinery: 19 kts.

19 kts. 2 Babcock & Wilcox, 865 lbs. sq. in., 950 deg. F. 87 (25 officers and 62 ratings) Boilers: Complement:

General

Name

General

Largest and fastest ships to join the Royal Fleet Auxiliary Service. Of an entirely new class designed by Hawthorn Leslie and Swan Hunter to meet specified requirements. Machinery for Oleander was manufactured by Wallsend Slipway & Engineering Co. Ltd., and for Olna and Olynthus by Hawthorn Leslie (Engineers) Ltd. Designed for support of the Fleet, they are fitted with handling gear for transferring fuels and stores by jackstay and derricks whilst steaming at speed. A helicopter landing platform and hangar are provided to enable helicopter carrying ships to collect stores by air. Sophisticated machinery control systems are incorporated, including bridge control of ahead revolutions, Specially strengthened for operations in ice. Accommodation of a very high standard is fully air conditioned. Additionally, Olna is fitted with a transverse bow thrust unit for improved manoeuvrability in confined waters and with a new design of replenishment at sea system.



OLYNTHUS

1966, courtesy Dr. Jan S. Pearsall

TIDEPOOL A 76

Launched

2 Later "Tide" Class

TIDESPRING A 75

Displacement: Measurement: Dimensions:

8.531 tons light (25,931 tons full load).
17,400 tons deadweight, 14,130 tons gross
550 (9p.), 583 (o.a.)×71×32 feet
Double reduction geared turbines. S.H.P.: 15,000=17 kts.
2 Babcock & Wilcox
115 (30 officers and 85 ratings)

Machinery: Boilers: Complement:

Gegeral

Built by Hawthorn Leslie, Hebburn. The machinery was installed by Hawthorn Leslie (Engineers) Ltd. Highly specialised ships for the fuelling and storing of naval vessels at sea and capable of high performance under rigorous service conditions. Their all-round capability is enhanced by the provision of a helicapter landing platform and hangar. Tidespring was laid down on 24 July 1961, launched on 3 May 1962, and accepted into service on 18 Jan. 1963. Tidespool was laid down on 4 Dec. 1961 and launched on 11 Dec. 1962.



TIDESPRING

1963. Official

3 "Tide" Class

TIDEFLOW (ex-Tiderace) A 97 TIDESURGE (ex-Tiderange) A 98 TIDEREACH A 96

15,000 tons (26,000 tons full load) 17,700 tons deadweight, 13,150 tons gross 550 (pp.), 583 (o.a.)×71×32 (max.) fe Displacement: Measurement: Dimensions: Double reduction geared turbines. S.H.P.: 15,000=17 kts:

General Tidereach, launched by Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tvne, on 2 June 1954, and completed on 30 Aug. 1955, was the first of the new class of Fleet Replenishment Tankers. The main machinery was marufactured by the Wallsend Slipway Company. Designed for the support of the Fleet and replenishment under way at sea. Capacious (15,000 torns of fuel cargo) and fitted with modern handling gear for transferring food, stores, ammunicion, oil and jet aircraft fuels by lackstay and derricks. Oil cargo can be discharged at high rate to ships on either beam or astern, while steaming at speed. Tiderange (renamed Tidesurge in -958) was launched at 1. L. Thompson & Sons Ltd.. Sunderland, on 30 Aug. 1954. the main machinery of both being manufactured by North Eastern Marire Engineering Co. Ltd., Wallsend-on-Tyne. A fourth ship, Tide Austral, was built for Australia, but operated by the Royal Navy until 1962 when she was taken over by the Royal Australian Navy amd renamed Supply on 7 Sep.

Photographs

A photograph of Tidereach appears in the 1959-60 and earlier editions. General



TIDESURGE

1966, A. & J. Pavia

Oilers —continued

7 "Leaf" Group

APPLELEAF (ex-M.V. George Lyras) A 83

22,980 tons full load 16,850 tons deadweight, 11,588 tons gross, 6,559 tons Displacement: deasurement:

net 526 (pp), $577\frac{9}{12}$ (o.d.) $\times 68\times 29\frac{9}{6}$ mean summer draught Doxford 6-cyl diesel, 119 r.p.m. B.H.P.: 6,800=14 kts. Dimensions: Machinery: Oil fuel: 1,480

Complement:

General
The M.V. George Lyras, built by Bartram & Co. Ltd. and formerly owned by Marine Enterprises Ltd., was launched on 22 Apr. 1955, completed in Sep. 1955, and taken over by the Royal Navy on 17 Apr. 1959 on a long term bareboat charter for service as a Royal Fleet Auxiliary and renamed R.F.A. Appleleaf, thus reviving the name of an R.F.A. oiler which served the Royal Navy in both World Wars and was scrapped at the end of the Second World War after 30 years of service.

Appleleaf was the first of a number of 16,000-18,000 ton tankers chartered by the Royal Navy to replace the smaller "Dale" and "Wave" classes of R.F.A. freighting tankers.

A photograph of Appleleaf appears in the 1959-60 to 1965-66 editions.

A photograph of Applelear appears in the 1737-90 to 1790-90 editions.

BAYLEAF (ex-London Integrity) A 79

Measurement: 17,960 tons d.w., 12,123 tons gross, 7,042 tons net
Dimensions: 526 (pp.), 556\frac{3}{3} (o.a.) \times 71\frac{1}{3} \times 30 feet

Machinery: Doxford 6-cyl. diesel, B.H.P.: 6,800=14\frac{1}{2} kts,

Oil fuel: 1,470 tons

General Both built by Furness S.B. Co. Ltd. Bayleaf was launched on 28 Oct. 1954 and completed in Apr. 1955. Brambleleaf was completed in Jan. 1954. Both from London & Overseas Freighters Ltd., 22 May 1959. Photograph of Bayleaf in the 1959-60 edition (Addenda).



BRAMBLELEAF

Added 1963, Tom Molland, Ltd.

CHERRYLEAF (ex-M.V. Laurelwood) A 82

Measurement:
Dimensions:
Machinery:
Discrete 6-cyl diesel. B.H.P.: 6,800=13½ kts. 1,540 tons

Oil fuel:

General General
Built by Sir James Laing & Sons Ltd., Sunderland. Launched on 28 May 1953.
Completed in Dec. 1953. From Molasses & General Transport Co. Ltd., 15 May 1959.

ORANGELEAF (ex-M.V. Southern Satellite) A 80

Measurement: Dimensions: 17.475 tons d.w., 12.481 tons gross, 6,949 tons net 525 (pp.), 5561 (o.a.)×714×301 (mean) feet Doxford 6-cyl. diesel. B.H.P.: 6,800=15 kts. Machinery: Oil fuel: 1.610 tons

Seneral

Built by Furness Shipbuilding Co. Ltd., Haverton Hill on Tees. Launched on 8 Feb. 1955. Completed June 1955. From South Georgia Co. Ltd., 25 May 1959.

A photograph of Orangeleaf appears in the 1963-64 to 1965-66 editions.

PEARLEAF A 77

24,900 tons 18,045 tons d.w., 12,139 tons gross, 7,216 tons net 535 (pp.), 568 (o.a.) \times 71 $\frac{1}{2}\times$ 30 feet Rowan Doxford 6-cyl. diesels, B.H.P.: 8,800=15 $\frac{1}{4}$ kts. Displacement: Measurement: Dimensions: Machinery:

General

Built by Scotstoun Yard of Blythswood Shipbuilding Co. Ltd., for Jacobs and
Partners Ltd., London, Launched on 15 Oct. 1959 and completed in Jan. 1960,
Chartered by the Royal Navy on completion. Can carry three different grades of cargo.



PEARLFAF

1966. Wright & Logan

PLUMLEAF A 78

24,920 tons 18,900 tons deadweight, 12,500 tons gross (approx.) 534 (pp.), 560 (o.a.)×72×30 feet N.E. Doxford 6-cyl. diesels, B.H.P.: 9,350=15½ kts. Displacement: Measurement: Dimensions: Machinery:

Built by Blyth D.D. & Eng. Co. Ltd. Launched 29 Mar. 1960. Completed July



PLUMLEAF

1965, Wright & Logan

Oilers—continued 7 "Wave" Class

Name	Builders	Launched	
A 242 WAVE BARON (ex-Empire Fladden)	Furness S.B. Co.	19 Feb. 194	46
A 212 WAVE RULER (ex-Empire Evesham)	Ltd., Haverton,	17 Jan. 194	
A 211 WAVE SOVEREIGN	Hill-on-Tees	20 Nov. 194	
A 265 WAVE CHIEF (ex-Empire Edgehill)	Harland & Wolff, (Govan), Glasgow	Ltd. 4 Apr. 19	46
A 246 WAVE DUKE (ex-Empire Mars)	Sir James Laing	16 Nov. 194	46
A 119 WAVE LAIRD (ex-Empire Dunbar)	& Sons Ltd.,	3 Apr. 194	
A 207 WAVE PRINCE (ex-Empire Herald)	Sunderland	27 July 194	

Displacement:

4,550 to 4,750 tons light, 8,200 tons standard (16,476 to 16,485 tons full load) 11.900 tons deadweight 465½ (pp.), 492½ (o.d.)×64½×28½ feet Light AA. in wartime

Measurement:

Dimensions:

Guns: Machinery:

Double reduction geared turbines, S.H.P.: 6,800=15 kts. Boilers: 3-drum type

Classed as Royal Fleet Auxiliaries, Launch dates above. Wave Baron, Wave Chief, Wave Prince and Wave Ruler are fleet replenishment ships, the other three being freighters. The turbines are of Metrovick type in Wave Baron, Wave Chief, Wave Duke and Wave Laird and Parsons type in the others. Wave Baron and Wave Prince were refitted and modernised in 1961-62. Wave Victor is on loan to the Air Ministry as a hulk at Gan Island, Wave Duke and Wave Laird are in reserve and may be bulked.



WAVE CHIEF

1966, A & J. Pavid



WAVE RULER

1965, courtesy Godfrey H. Walker, Esa

Disposals.

Wave Commander and Wave Liberator were scrapped in 1959. Wave Conqueror and Wave King were sold in 1960 when Wave Emperor, Wave Governor and Wave Premier were also stricken from the list. Wave Protector was hulked at Malta, Wave Regent was broken up and Wave Monarch was sold to foreign interests in 1961. Wave Knight and Wave Master were disposed of in 1963-64.

3	6.6	Eddy	9 9	Class

Name	No.	Builders	Launched	Completed
EDDYNES	S A 295	Lobnitz & Co. Ltd., Renfrêw Blyth Dry Docks & Shipbuilding Co. Blyth Dry Docks & Shipbuilding Co.	22 Oct. 53	10 Feb. 54 11 Oct. 54 7 June 53

Displacement: Measurement: Dimensions:

1,960 tons light (4,160 tons full load)
2,157 to 2,300 tons gross, 2,095 to 2,200 deadwelght
270 (pp.), 286 (o.a.)×44×17½ feet
1 set triple expansion. 1 shaft. I.H.P.: 1,750= 12 km
2 oil burning cylindrical

Machinery: Boilers:

General Royal Fleet Auxiliaries. Launch dates above. Constructed on the combined transverse and longitudinal system of framing and classed 100 A1 at Lloyd's for the carriage of petroleum in bulk. Cargo capacity: 1,650 tons oil. Only Eddyfirth and Eddyrock appear in the 1966 Navy List. Eddyness is in reserve (photograph in the 1963-64 to 1965-66 editions).

The main propelling machinery was built by Lobnitz & Co. Ltd., Renfrew and boilers by Caledon Shipbuilding & Engineering Co. Ltd., Dundee. Disposals

Eddybay, Eddybeach, Eddycliff, Eddycreek and Eddyreef were disposed of in 1963 and 1964.



EDDYFIRTH

Added 1960, J. W. Kennedy

Oilers—continued

2 "Surf" Class

SURF PATROL (ex-Tatry) A 357 SURF PIONEER (ex-Beskidy) A 365 15.800 tons 7.742 tons gross, 11.500 tons deadweight 445 (pp.), 4691 (o.a.)×601×271 (max.) feet Doxford 4-cyl. diesels. B.H.P.: 4.250-13.75 kts. Displacement: Measurement: Dimensions: Machinery:

Taken over by Great Britain whilst under construction by Bartram's, Sunderland, for Poland, at the time of the Korean War. Launched on 7 Feb. and 23 Apr. 1951, respectively Royal Fleet Auxiliaries. Both laid up in reserve.

Photographs

A photograph of Surf Patrol appears in the 1963-64 to 1965-66 editions



SURF PIONEER

Skyfotos

4 Later "Ol "Class

BIRCHOL (19 Feb. 1946) A 127 ROWANOL (ex-Cedarol, ex-Ebonol, 15 May 1946 A 284

OAKOL (28 Aug. 1946) A 300 TEAKOL (14 Nov. 1946) A 167
Displacement: 2,670 tons
Measurement: 1,050 tons deadweight
Dimensions: 218 (pp.), 232 (o.a.) > 39 × 15½ feet

Triple expansion, I.H.P., 1,140=11 kts.

Machinery: Complement: General

All built by Lobnitz & Co. Ltd., Renfrew. Launch dates above. Classed as Royal Fleet Auxiliaries. Photographs

A photograph of Oakol appears in the 1959-60 edition, and of Rowanol in the 1958-59 and earlier editions.



TEAKOL

1963. I. W. Kennedy

"Ranger" Class

1 Caledon Shipbuilding & Engineering 3 Harland & Wolff Ltd. (Govan), Glasgow Co. Ltd., Dundee

GOLD RANGER A 130 12 Mar. 1941

BLACK RANGER A 163 22 Aug. 1940 BLUE RANGER A 157 29 Jan. 1941 BROWN RANGER A 169 12 Dec. 1940

Measurement:

Dimensions:

3,313 to 3,417 tons gross. Gold Ranger 3,788 tons deadweight, others 3,435 to 3,781 tons deadweight Gold Ranger 339 $\frac{1}{2}$ (pp.), 355 $\frac{1}{2}$ (o.a.)×47×20 feet Others 349 $\frac{1}{2}$ (pp.), 365 $\frac{1}{2}$ (o.a.)×47×20 feet Burmeister & Wain diesels. B.H.P.: 2,750=12 kts.

Machinery: General

General

Classed as Royal Fleet Auxiliaries, Launch dates above. The furmel in these ships is on the port side. All are fitted with special derrick on the beam to facilitate fuelling at sea, Gray Ranger was lost during the Second World War.

Photographs

A photograph of Black Ranger appears in the 1960-61 and 1961-62 editions.

Disposals

Sister ship Green Ranger was officially deleted from the list in 1965.



BROWN RANGER

1962. A. & I. Pavla

Disposals of other classes of Oilers
Olna, A 216, was laid up in reserve in 1965 after 20 years' service and will be disposed
of in due course (a new Olna having been completed).
Of the Later "Dale" class, Ennerdale was scrapped, Easedale sold, and Eaglesdale for disposal in 1959. Cedardale, Derwentdale, Dewdale and Dingledale were
disposed of in 1960, and Echodale went to reserve in 1961 to await disposal.
Of the Early "Dale" class Arndale and Broomdale were disposed of in 1960, and Abbeydale
was for disposal in 1961. Bishopdale was laid up in reserve in 1965.
The five old clare of the "Oil" class Balad Calend Earted Preced and Sarbol.

was for disposal in 1961. Bishopdale was laid up in reserve in 1700.

The five old oilers of the "O!" class, Belgol, Celerol, Fortol, Prestol and Serbol, were all disposed of in 1958.

The six old oilers of the smaller "O!" class, Bozol, Elderol, Elmol, Larchol, Limol and Philol, were all stricken from the Royal Fleet Auxiliary List in 1959, and were sold or otherwise disposed of. War Hindoo, latterly used only as a hulk, was scrapped.

BOOM DEFENCE VESSELS

MANDARIN

2 "Wild Duck" Class

PINTAIL

Displacement: Displacement Dimensions Machinery: Complemen

950 tons standard (official figure) 150 (pp.), 168½ (excluding horns) × 36½ × 10¾ feet 1 Davey Paxman 16 cyl. diesel. Variable pitch propeller 24 (6 officers, 6 petty officers, 12 ratings)

General

General Mandarin was the first of a new class of marine service vessels. Launched on 17 Sep. 1963 and handed over on 5 Mar. 1964. Pintail was launched on 3 Dec. 1963. Both built by Cammell Laird & Co. Ltd., Birkenhead. Designed to be used for mooring, salvage and boom work. Previously these three tasks were separately undertaken by specialist vessels, but the new type is able to give all three services. Capable of laying out and servicing the heaviest moorings used by the Fleet and also maintaining booms for harbour defence. Heavy lifting equipment enables a wide range of salvage operations to be performed, especially in harbour clearance work. The special heavy winches have an ability for tidal lifts over the apron of 200 tons.



2 "Lay" Class

LAYRURN

RN
Displacement:
Dimensions:
Machinery:
Boilers:
Complement:

Circa 800 tons standard (circa 1,050 tons full load) 160 (pp.), 192 $\frac{1}{3}$ (o.a.)×34 $\frac{1}{3}$ ×11 $\frac{1}{3}$ feet Steam reciprocating, 2 shafts, I.H.P.: 1,300=14 kts. 2 Foster Wheeler "D" type (see Engineering) 2 officers, 29 to 34 ratings

General

Both built by Wm. Simons & Co. Ltd. (Simons-Lobnitz Ltd.). The first boom defence vessels designed and built since the Second World War. Laymoor was the first and "name" ship of her class. Layburn, which cost £565,000 was launched on 14 Apr. 1960 and completed on 7 July 1960. Laymoor which cost £562,000 was launched on 6 Aug. 1959 and accepted on 9 Dec. 1959, in addition to mihor salvage work and towing net sections, can lay and maintain the latest types of underwater and surface boom defences, first class moorings and navigational buoys. Designed for naval or civilian manning. Lifting capacity is greater than that of predecessors, improvement in accommodation enables them to be operated in any climate. A photograph of Layburn appears in the 1962-63 to 1964-65 editions.

Engineering
The main machinery consists of two forced draught boilers, sited in line astern and fired from the centre position, working at 200 lb. per square inch pressure and each capable of evaporating 26,000 lbs. per hour, and a steam reciprocating engine with three cylinders, the diameters being 14½ inches, 25 inches and 44 inches, and the stroke 24 inches, designed to develop 1,300 indicated horsepower.



LAYMOOR

1964. Official

18 "Bar" Class

2 Ardrosson Dockyard Co. Ltd., Ardrossan No. Launchied BARBECUE P 214 19 Dec. 1944 BARCAROLE P 287 14 Mar. 1945 3 Biyth D.D. & S.B. Co.
BARBAIN P 201
BARBICAN P 243
BARNSTONE P 297 Jan. 14 Mar, 1938 25 Nov, 1939

1 Ferguson Bros. Ltd., Port Glasgow BARHILL P 204 26 Nov. 1942

1 Hall Russell & Co. Ltd., Aberdeen BARRAGE P 254 2 Dec. 1937

4 John Lewis & Sons Ltd., Aberdeen

BARFIELD P 244 28 July 1938

BARFOOT P 202 25 Sep. 1942

BARGLOW P 216 9 Nov. 1942

BARNARD P 241 1 July 1942 2 Lobnitz & Co. Ltd., Renfrew BARCLIFF P 207 10 May BARNDALE P 215 30 Nov Rentrew 10 May 1940 Nov. 1939 1 Philip & Son Ltd., Dartmouth BARFOIL P 294 18 July 1942 ## A Co. Ltd., Renfrew BARFOAM P 282 8 Sep. 19 BARFOSS P 200 17 Feb. 19 BARMOND P 232 24 Dec. 19 BARRINGTON P 259 15 Nov. 19 1942 1942

Displacement: Dimensions: Machinery: Boilers: Fuel:

750 tons standard (919 to 1,000 tons full load)
150 (pp.), 173\(\frac{1}{4}\) (o.a.), 182 (horns) \(\times\) 32\(\frac{1}{4}\) \(\times\) 11\(\frac{1}{2}\) feet
Triple expansion, I.H.P.: 850=11 kts. Sea speed 9 kts.
2 S.E. (200 lbs. per sq. in.)
214 tons coal (Barfoam and Barmond to convert to oil firing in 1966)

3,000 miles

Radius: Complement:

Boom Defence Vessels-continued

General
Built under the 1936, 1937, 1939 and Second World War Estimates. Bow lift of 27 to 70 tons. Barnehurst was returned from the Royal Netherlands Navy in 1955. Barcarole, Barcliff, Barhill and Barndlad are Port Auxiliary Service Craft. Barbecue, Barfield, Barfoot, Barfoss and Barglow are also civilian manned. Barfoss is a Degaussing Rangelaying vessel. Second World War losses: Barflake, Barlight.

Class
Barilla and Barndale were used for Ship Target Trials in 1949-50. Barstake was transferred to Burma (on loan to the Rangoon Port Commission since 1946) but was returned to the Royal Navy at the end of 1959 at Singapore and put up for sale in 1960. Barbour, Bardell and Barricade were discarded.
Transfers
Barbrake and Barcross were transferred to South Africa, and Barbarlan, Barbette (first of this name in the class, launched on 15 Dec. 1937) and Barfair to Turkey.
Barcock was on charter to Belgium, but was returned to the Royal Navy on 24 Aug. 1949. Baron was transferred to Ceylon in 1958 (purchased by the Colombo Port Commission).

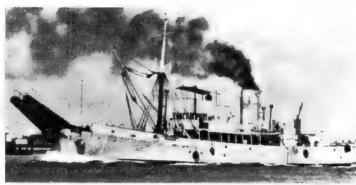
Disposals

Disposals
Barberry, Barbrook, Barcombe, Barford, Baritone, Barlane, Barlow, Barmill, Barneath and
Barnwell were deleted from the Navy List in 1958. Barilla and Baronia were discarded
in 1959 and Barholm in 1960. Barbette (second of this name in the class, accepted into service
on 12 July 1943), Barbridge, Barcastle, Barcock, Barcote, Barcot, Bardolf, Barlake, Barsing,
Barsound, Barthorpe and Barrier for disposal in 1962. Barclose and Barspear stricken from
the Navy List in 1963 when Barwind, Barking and Barbourne were also for disposal. Barbastel,
Barfount, Barkis, Barleycorn, Barmouth, Barnaby, Barnehurst, Barova, Barranca and Barrhead
were sold in 1964. Bartisan for disposal in 1966.



BARNDALF

1965, Dr. Giorgio Arra



BARFOSS (Degaussing Rangelaying Vessel)

1963. I. W. Kennedy

"Moor" Class

MOORHEN A 489 MOORLAND A 491 MOORPOUT P 223 MOORSMAN P 284

Displacement: Moorhen, Moorpout: 650 tons standard (900 tons full load); Moorhen, Moorpout: 149 (pp.), 159 (o.a.) hull×30× 12 feet (196 o.a. horns); Moorland: 135 (pp.), 145

General General Hoor ** Class**

Moorhen, Moorpout: 149 (pp.), 159 (o.a.) hull×30× 12 feet 1.H.P.: 500=9 kts.

General
Built in 1938-46. Displacement and dimensions vary. Employed as Boom Defence
Vessels. Boom Working Vessels, Mooring Vessels and Salvage Vessels. Fitted with salvage pumps, air compressors and diving equipment. Moorsman and Moorpout are of
the larger type built by H.M. Dockyard, Chatham. Moorland was built by Goole Shipbuilding & Repair Co. Ltd. Moorhen,
Moorland and Moorpout are Port Auxiliary
Service Craft at Malta, Gibraltar and Devonport, respectively. Moorsman, in the
Clyde, is, also civilian manned. Disposals

Disposals

Moordale was sold in 1961. Moorburn, Moorcock, Moorfield, Moorfire, Moorgrass,
Moorhill, Moormyrtle and Moorside were for disposal in 1962. Mooress and Moorfowl were stricken from the list in 1963. Moorfly and Moorgrieve have also been sold.



MOORPOLIT

1963, I. W. Kennedy

ROYAL YACHT

BRITANNIA

3,990 tons light (4,961 tons full load)
5,769 tons gross
Length: 360 feet (pp.), 380 feet (w.l.), 4124 feet
(o.a.) Beam: 55 feet. Draught: 154 (mean at load), Displacement: Measurement: Dimensions:

(o.a.) Beam: 5.

Single reduction geared steam turbines, 2 shafts, S.H.P.: Machinery: 12,000 21 kts. (approx.) continuous cruising speed, 22.75 kts. max. (trials)

Boilers:

2 2,100 miles at 20 kts., 2,400 miles at the economical speed of 18 kts., 3,000 miles at 15 kts. 330 tons (can be increased to 490 tons with auxiliary fuel tanks) Radius:

Oil fuel:

Complement:

General

This vessel was designed as a medium sized naval hospital ship to be used by Her Najesty The Queen in time of peace as a Royal Yacht, Pennant No. A 00. Built by John Brown & Co. Ltd., Clydebank. Ordered in Feb. 1952. Laid down on 16 June 1952. Launched on 16 Apr. 1953. Completed on 14 Jan. 1954. She has endurance sufficient to enable her to undertake long ocean voyages, modified cruier stern, and raked bow. Her construction conforms to mercantile practice. The complete bridge structure is constructed of aluminium, and the funnel is also of aluminium. The ship is fitted with Denny-Brown single fin stabilisers to reduce roll in bad weather from 20 deg. to 6 deg. Cost £2,098,000. To enable her to pass under the bridges of the St. Lawrence Seaway when she visited Canada, the top 20 feet of her mainmast and the wireless aerial on her foremast were hinged in Nov. 1958 so that they can be lowered as required. Her two 3-pdr. saluting guns were removed. Photographs

Larger aerial photographs appear in the Addenda of the 1958-59 edition and in the 1959-60 edition, and another, starboard view, in the 1960-61 to 1962-63 editions.



BRITANNIA

1963, courtesy Godfrey H. Walker, Esq.

TRAWLERS

8 "Isles" Class (Tank Cleaning Vessels)

1 A. & J. Inglis Ltd., Glasgow SWITHA 3 Apr. 1942 2 Ardrossan Dockvard Co. Ltd., Ardrossan

COLL 7 Apr. 1942 3 Aug. 1942 GRAEMSAY

2 Cook, Welton & Gemmell Ltd., Beverley 3 John Lewis & Sons LEd., Aberdeen
CALDY 31 Aug. 1943
FOULNESS 23 Mar. 1943
SKOMER 17 June 1943 2 May 1942 29 Aug. 1942 BERN

560 tons standard (770 tons full load)
150 (pp.), 164 (o.a.)×27;×14 feet
Triple expansion. 1 shaft, I.H.P.: 850=12 kts.
1 cylindrical
183 tons Displacement: Dimensions:

Machinery: Boilers:

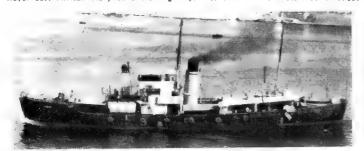
183 tons 4,200 miles at 8 kts.

Launch dates above. Former minesweeping trawlers converted to tank cleaning vessels. Classed as port auxiliary service craft and have "A" pennant numbers. Sister ship Bardsey, also converted, was taken over by Malta Dockyard, For transfers, disposals and other particulars of "Isles" class trawlers see 1961-62 edition. A large photograph of Graemsay appears in the 1959-60 to 1961-62 editions. Disposal

The minesweeping trawler Possilia.

Disposor

The minesweeping trawler Rosolind, of the "Shakespearian" class, on loan to the Royal East African Navy as a training ship, was stricken from the list in 1963.



SKOMER

1962, A. & J. Pavia

SALVAGE **VESSELS** OCEAN

SALVEDA

1.250 tons standard (1,360 tons full load) 184 (pp.), 194 (o.a.) \times 34 $\frac{1}{2}\times$ 11 $\frac{1}{4}$ (mean) feet H.P.: 1,200=12 kts. 150 tons 62 Displacement: Dimensions: Machinery: Oil fuel: Complement:

Built by Cammell Laird & Co. Ltd., Birkenhead, and launched on 9 Feb. 1943. Formerly a Royal Fleet Auxiliary ocean salvage vessel on charter to Metal Industries Ltd. Now in the Navy List, in reserve.

Ocean Salvage Vessels—continued

SALVESTOR SALV SEA SALVESTOR SALVESTOR SALVICTOR SEA SALVICTOR 1.440 tons standard (1.700 tons full load) 200½ (pp.), 216 (o.a.) ×37!×13 (max.) feet Triple expansion, 2 shafts, 1.H.P.: 1,500-12 k 310 tons 52 to 72 launched SALVALOUR
SALVALOUR
Displacement:
Dimensions:
Machinery:
Oil fuel:
Ocean salvage vessels. All launched in 1942-45. Prince Salvor, Salvalour and Sea Salvand vere built by Goole Shipbuilding & Repair Co. Ltd., and launched on 8 Mar. 1943, 2 Nov. 1944 and 22 Apr. 1942, respectively. Salvastor, Salvator and Salvail vere built by Wm. Simons & Co. Ltd., Renfrew, and launched on 28 Aug. 1942, 11 Mar. 1944 and 30 Apr. 1945, respectively. Salvastor, Salvator and Salvail vere Salvor and Salvaility on the Salvar and Salvaility. Prince Salvar and Salvaility on the Salvar and Salvaility. Prince Salvar and Salvaility formerly on charter to commercial firms, and Salvalour, Salvastor and Salvictor are in the Navy List, in reserve.
Transfers
Salventure is on loan to the Royal Hellenic Navy and is temporarily renamed Sotir.
Class
King Salvar was converted to a submaring and Salvar and

King Salvor was converted to a submarine rescue bell ship in 1953-54 and renamed Kingfisher; and was sold to Argentina in Dec. 1960, sailing to Argentina in Apr. 1961 under the new name Tehuelche (again renamed Guardiamarina Zicari in 1963). Salvage Duke, formerly on charter to Turkish Salvage Administration (renamed Imroz), was gutted by fire in 1959.

Ocean Salvor and Salviola were disposed of in 1960, and others will be discarded.



SEA SALVOR

1963, A. & I. Pavia



SALVICTOR

Added 1966, Official

COASTAL SALVAGE VESSELS

6 "Kin" Class

KINBRACE KINGARTH Displacement: Measurement:

Dimensions:

Triple expansion. 1 shaft. 1.H.P.: 600-9 kts. 1 return tube cylindrical (30 ton) Machinery:

Boilers:

Boilers: 1 return tube cylindrical (30 ton)

General Complement: 34

Coastal salvage vessels. Equipped with horns and heavy rollers. Can lift 200 tons dead weight over the bow. Uplifter, built by Smith's Dock Co. Ltd., was the only salvage vessel wearing the White Ensign. She was laid down on 13 Feb. 1943. launched on 29 Nov. 1943, and completed on 6 Apr. 1944. (Kingarth wore the White Ensign in 1957). Dispenser is on charter to Liverpool & Glasgow Salvage Association. Succour and Swin are Royal Fleet Auxiliaries wearing the Blue Ensign. Kinbrace, Kingarth and Uplifter are in the Navy List, in reserve. Kinloss is in the Port Auxiliary Service as a mooring vessel.

Photographs

A photograph of Kingarth appears in the 1959-60 and earlier editions, of Swin in

A photograph of Kingarth appears in the 1959-60 and earlier editions, of Swin in the 1956-57 and earlier editions, and of Uplifter in the 1960-61 to 1962-63 editions. Disposals

Sister ship Help was disposed of, and Lifeline was also on the disposal list in 1960.



KINLOSS

1966, Wright & Logan

MINE COUNTERMEASURE AND DIVING TRIALS

Modified Ocean Salvage Vessel

RECLAIM (ex-Salverdant) A 131

Displacement:
Dimensions:
Machinery:
Oil fuel:
Radius:
Complement:

1,200 tons standard (1,800 tons full load)
200 (pp.), 217\(\) (o.c.) < 38 × 15\(\) (sec
Triple expansion, 2 shafts. I.H.P.: 1,500=12 kts.
3,000 miles
84

Construction

Built by Wm. Simons & Co. Ltd., Rehfrew. Engined by Aitchison Blair Ltd. Laid down on 9 Apr. 1946. Launched on 12 Mar 1948. Completed in Oct. 1948. Her construction was based on the design of a "King Salvor" class Royal Navy ocean salvage vessel. She was the first deep diving and submarine rescue vessel to be built as such for the Royal Navy. She is fitted with sonar, radar, echo-sounding apparatus for detection of sunken wrecks, and is also equipped for submarine rescue work.

Reclassification
Formerly a tender to H.M.S. Vernon shore establishment at Portsmouth for deep diving experiments, and subsequently a deep diving vessel in the Portsmouth Squadron. Reclassified as a Mine Countermeasure Support and Diving Trials Ship in 1960. and attached to H.M.S. Lochinvar, the minesweeping base at Port Edgar. Carried out deep experiments in the Canary Islands in Jan. to Mar. 1961. Pennant No. A 231.



RECLAIM

1966, courtesy Dr. Giorgio Arra

Disposals of Mining and Diving Tenders

The mining tenders Nightingale and Vesuvlous were scrapped in 1956, the Torpedo recovery vessel Redwing in 1957, the experimental trials vessel Decibel in 1957, the deep diving tender Clearwater, and the mine location tenders Dipper and Diver in 1959, the diving ship Deepwater (ex-German Walter Haltzapfel) in 1960, and the tender Dwarf, in 1962.

CABLE VESSELS

2 "Bull" Class

BULLFINCH (19 Aug. 1940)

ST. MARGARETS (Oct. 1943)

Displacement: Measurement: Dimensions: Guns: Machinery: 2.600 to 2.700 tons full load 1.524 tons pross, 1.200 tons deadweight 2.281 (pp.). 252 (o.a.) 36 \(\foatigma\) 16 (mean) feet 1-4 inch. 4-20 mm. AA. (no armament fitted) Triple expansion. 2 shafts. I.H.P.: 1,250=12 kts.

Machinery: Triple expansion. 2 shafts. I.H.P.: 1,250=12 kts.

General
Cable ships classed as Royal Fleet Auxiliaries. Both built by Swan, Hunter & Wieham Richardson Ltd. Launch dates above. Bullfrog and Bullhead of this type were transferred to Cable and Wireless service in 1947. A larger, port broadside, view of Bullfinch appears in the 1951-52 to 1957-58 editions.

The smaller cable vessel Lasso was disposed of at the end of 1959.



BULLFINCH

1966, Official



ST. MARGARETS

Added 1963, Tom Molland Ltd.

EXPERIMENTAL

REL (ex-NSC (E) Displacement: Dimensions: 1012) 300 tons (official figure) $190\times30\times4\frac{1}{2}$ feet

Experimental Trials Vessel. Basically of the tank landing craft (LCT(3) Type.



WHIMBREL

1965, J. W. Kennedy

ICEWHALE

Displacement:

Dimensions: Machinery: Complement:

289 tons standard (350 tons full load)
120×24×9 feet
Speed=9 kts.
12 (Master, Mate and 10 ratings)

Ceneral

Experimental Trials Vessel for the Underwater Weapons Establishment, Portland.

SAREPTA (ex-Frieda Peters)

Displacement: Dimensions: Tubes: 465 tons standard 150 (pp.). 157 (o.a.)×27½×12 feet 4—21 inch

Ex-German vessel. Launched in 1920. Multi-purpose torpedo experimental, torpedo-firing, and torpedo recovery vessel. Reclassified as TRV in 1956, but not numbered.

A photograph of Screpta appears in the 1951-52 to 1957-59 editions.

TRV 1, TRV 3, TRV 4, Choctaw (TRC 4817) and Mortar are also employed as recovery vessels. TRV 6 is an experimental trials vessel, and NSB 351, NSB 358 and NSB 359 (ex-LCM (7)s 7037, 7104 and 7110, respectively) are trials vessels.



ICEWHALE

1963, courtesy Godfrey H. Walker, Esq.

FLEET TENDERS

ABERDOVEY ABINGER

ALNMOUTH APPLEBY ASHCOTT

12 New Construction BEAULIEU BEDDGELERT BEMBRIDGE

BLAKENEY BRODICK

Measurement: Dimensions:

General

70 tons gross register 75 (pp.), 79½ (o.g.)×18×5½ feet 1 Lister Blackstone 4-cyl. diesel. B.H.P.: 210=10-5 kts.

Built in 1963-65 by Isaac Pimblott & Sons, Northwich, and J. S. Doig Ltd., Grimsby, six by each yard, Built to the requirements of Lloyd's Register, Designed to carry 25 tons deadweight (or up to 3,000 cu. ft.) of stores or 200 standing passengers in addition to two 21 inch torpedoes each weighing 13 tons, The Royal Navy intends to build 60 new fleet tenders over a period of ten years to replace the old MFVs.



BEAULIEU

1965, Wright & Logan

MFV Types

Only MFV 72, MFV 197, MFV 255 and MFV 658 remain in the Navy List. II8 Motor Fishing Vessels are listed as Port Auxiliary Service Craft. Employed for subsidiary duties serving warships and in the dockyards, they are of four types:—

MFV 2 to 436 MFW 609 to 944 MFV 1004 to 1257 MFV 1526 to 1574

Length: 61½ feet
Length: 45 feet
Length: 75 feet
Length: 90 feet

53 in port auxiliary service 24 in port auxiliary service 36 in port auxiliary service 5 in port auxiliary service

General

MFV 1044 was armed with 1—40 mm. forward (in place of mast) and 1—20 mm. on the after superstructure, MFV 206 was at Kilindini (Royal East Aftican Navy). MFV 1151, Squirrel and MFV 1080, Watchful, were replaced as Fishery Protection Gunboats by an inshore minesweeper and a motor launch (replaced by an inshore minesweeper) with those names.

MFV 270, 2041 and 1564 were discarded in 1957. MFV 1161 was removed from the Navy List in 1959, 56 others were stricken in 1960, MFV 32 and 1189 in 1961, ten in 1962 including MFV 36, 174 and 637, and 17 in 1963. MFV 1036 was wrecked in Apr. 1963 and sold. MFV 76, 77, 101, 133, 301 and 867 were for disposal in 1964, and 671, 1023 and 1207 sold in 1966,

STORE CARRIERS

2 "Bacchus" Class

BACCHUS A 404

HEBE A 406

Displacement: Measurement: Dimensions: Machinery Oil fuel:

2,740 tons (light), 7,958 tons (full load)
4,960 tons gross, 2,500 tons net, 5,218 tons deadweight
350 (pp.), 379 (o.d.) × 55 × 22 (max.) feet
Swan Hunter Sulzer diesel. I shaft B.H.P.: 5,500 =15 kts.
720 tons
57

Complement:

General

General
Built by Henry Robb Ltd., Leith, for the British India Steam Navigation Co. Taken over
by the Royal Navy on completion on long term bare boat charter and operated as Royal
Fleet Auxiliaries. Rated as dry cargo ships. Bacchus was completed in Sep. 1962, Hebe in
May 1962. Crew accommodation and engines aft as in tankers.

The previous ship named Bacchus, a store carrier and distilling vessel launched in
1936. was disposed of in 1962 at Singapore.

Of the surviving aircraft transports Skua was for disposal in 1962, and Blackburn
became a hulk tender for the Clyde Division, Royal Naval Reserve.



BACCHUS

1963. A. & J. Pavia

THOMAS GRANT

Displacement: Dimensions:

Machinery

409 tons $113\frac{1}{2}\times25\frac{1}{2}\times10$ feet 2 diesels. Speed=9 kts.

Local store carrier, Completed in 1953, Built by Charles Hill & Sons Ltd., Bristol. A photograph appears in the 1957-58 and earlier editions. Turned over to the Port Auxiliary Service in 1959 under Dockyard administration at Portsmouth.

ROBERT DUNDAS (28 July 1938) A 204 ROBERT MIDDLETON (29 June 1938)

Displacement: 900 tons light (1,900 tons full load) A 241
1,000 tons deadweight
210 (pp.), 222½ (o.a.) Robert Dundas, 220 (o.a.)
Robert Middleton, X35×13½ (mean) feet
Atlas Polar Diesel. 1 shaft. B.H.P.: 960=10.5 kts.

Machinery: Oil fuel:

Oil ruei: 60 tons
Complement: 17

General
Coastal store carriers. Both built by Grangemouth Dockyard Co. Ltd. Machinery by
British Auxiliaries Ltd., Govan. Launch dates above. Royal Fleet Auxiliaries.
Petrol carriers: Petrobus and Rippledyke were sold in 1959-60. Airsprite and Nasprite
were disposed of in Mar. 1965 and 1964, respectively.



ROBERT DUNDAS

1966, courtesy Dr. Giorgio Arra

DEGAUSSING VESSELS

3 Ex-Motor Minesweepers

DGV 400 (ex-MMS 1002)

DGV 401 (ex-MMS 1003) DGV 403 (ex-MMS 1011)

Displacement:
Dimensions:
Machinery:
Oil fuel:
Complement:

254 tons standard (360 tons full load) 126 (pp.), 140 (o.a.)×26×12\(\frac{1}{2}\) (max.) feet Gardner diesel. B.H.P.: 500=10 kts.

General
Former large motor minesweepers of the "126-ft." Type, 1001 series, of wooden construction, converted into Degaussing Vessels. To be replaced by the converted inshore minesweepers Fordham, Thotcham and Warmingham, see earlier page.

Sister ship DGV 402 (ex-MMS 1004) was officially stricken from the list in 1963.



DGV 403

1963. I. W. Kennedy

ARMAMENT CARRIERS

KINTERBURY A 378 Displacement:

1,490 tons standard (1,770 tons full load)

Measurement:

600 tons deadweight 185 (pp.), 1994×344×13 feet Triple expansion. 1 shaft. I.H.P.: 900=11 kts. 154 tons Dimensions: Machinery:

General Coal:

Launched in 1943 and 1944, respectively. Both built by Philip & Son Ltd. Rated as naval armament carriers, Converted in 1959 with hold stowage and a derrick for handling guided missiles for attending and servicing the guided weapons trials ship Girdle Ness. A photograph of Throsk appears in the 1957-58 and earlier editions.



KINTERBURY

Added 1963, Tom Molland Ltd SNIDER A 375

THROSK

ENFIELD A 395 GATLING A 376 Displacement: Measurement: Dimensions: Machinery: Complement:

MAXIM A 377 NORDENFELT A 135 604 to 663 tons 240 tons 131½ to 144!×25×8 feet Reciprocating. I.H.P.:500=9 kts.

General
All built by Lobnitz & Co. Ltd., Renfrew, and rated as naval armament carriers.
Chattenden was reduced to reserve in 1961 and used as a dumb-derrick lighter.
BALLISTA BOWSTRING FLINTLOCK OBUS
BLOW PIPE CATAPULT MATCHLOCK SPEAR

BLOW PIPE General The above. The above, of various displacements and other particulars are all naval armament vessels in the Port Auxiliary Service.

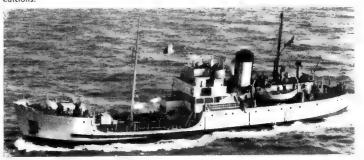
WATER CARRIERS

3 Philip & Son Ltd., Dartmouth SPA (11 Oct. 41) A 192 SPABROOK (24 Aug. 44) A 224 SPABURN (5 Jan. 46) A 257

2 Charles Hill & Sons
Ltd., Bristol

SPALAKE (10 Aug. 46) A 260
SPAPOOL (28 Feb. 46) A 222
SPABURN

Displacement:
Measurement:
Measurement
Measure Spabeck, formerly high test peroxide carrier for the experimental submarine Explaier, was disposed of in May 1966. A photograph of Spalake appears in the 1954-55 to 1957-58 editions



SPA

Added 1963

12 "Fresh" Class

FRESHLAKE FRESHBURN FRESHENER FRESHFORD FRESHMERE FRESHPOND FRESHPOOL FRESHSPRAY FRESHSPRING

FRESHTARN FRESHWATER FRESHWELL

Displacement: Dimensions: Machinery:

594 tons $126\frac{1}{4} \times 25\frac{1}{2} \times 10\frac{1}{4}$ (max.) feet Triple expansion. 1.H.P.: 450=9 kts.

ieneral
Freshener, Freshspray, Freshspring and Freshwater were converted from coal to oil fuel, twas stated in 1961. A photograph of Freshpond appears in the 1951-52 to 1953-54 editions and of Freshlake in the 1963-64 to 1965-66 editions. Freshbrook and Freshnet were stricken from the list in 1963.

There are also four small water carriers built in 1966 by Drypool Engineering & Drydock Co., Hull:—Waterfall, Watershed, Waterside and Waterspout, 300 tons gross, diesels, 11 knots.



FRESHPOOL

1966, courtesy Dr. Giorgio Arra

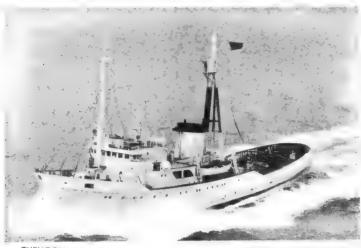
TUGS

TYPHOON A 95

800 tons (approx.) standard (1,380 tons full load) 200 (o.a.), 181 (pp.) \times 40 \times 13 feet 2 12-cyl. turbocharged vee type diesels, 1 shaft. B.H.P.: 2,750-over 16 knots Displacement: Dimensions:

Machinery:

General
Royal Fleet Auxiliary. Built by Henry Robb & Co. Ltd., Leith, Launched on 14 Oct. 1958.
Completed in 1960. Improved "Bustler "design. Diesels manufactured by Vickers-Armstrongs Ltd., Barrow-in-Furness. The machinery arrangement of two diesels. geared to a single shaft was an innovation for naval ocean tugs. Controllable pitch propeller. 150 r.p.m. Fitted for fire fighting, salvage and ocean rescue, with a heavy mainmast and derrick attached. Bollard pull 32 tons.



TYPHOON

1966, Skyfotos

" Con 2 Class

CONFIANCE (15 Nov. 1955) A 289

CONFIDENT (17 Jan. 1956) A 290

Displacement: 760 tons (loaded)
Dimensions: 140 (pp.), 154½ (o.a.)×35×11 feet
Hachinery: 4 Paxman diesels, 2 shafts, B.H.P.: 1,600=13 kts.
Complement: 29+13 salvage party
Construction
Built by A. & J. Inglis, Ltd., Glasgow, Launch dates above. Confiance was completed on 27 Mar. 1956. Fitted with 2,500 mm. diameter Stone Kamewa controllable pitch propellers.



CONFIANCE

3 "Samson" Class

SAMSON (14 May 1953) A 390

SEA GIANT (2 June 1954) A 288 SUPERMAN (23 Nov. 1953)

850 tons gross 180×37×15½ feet Triple expansion. 2 shafts

Measurement: Dimensions: Machinery:

General General All built and engined by Alexander Hall & Co. Ltd., Aberdeen. Launch dates above. A photograph of Samson appears in the 1957-58 and earlier editions



SEA GIANT

1963, A. & J. Pavla

2 "Envoy" Class

ENCORE (Dec. 1944) A 379

ENVOY (Feb. 1944) A 165

Displacement: Measurement:

868 tons standard (1,332 tons full load)

Dimensions: Machinery:

762 tons gross 160 (pp.), $174\frac{1}{2}$ (o.a.) $\times 34\frac{1}{2}\times 15\frac{3}{2}$ (max.) feet Triple expansion. I.H.P.: 1,700=12 kts.

Boilers: Oil fuel: Complement: 2 cylindrical 398 tons

General

All built by Cochrane & Sons, Ltd., Selby. Launch dates above. In wartime these ships carried 1—3 inch AA. gun, 2—20 mm. AA. guns, and 2 M.G. Enticer was lost on 21 Dec. 1946. Enforcer and Enigma were stricken from the list in 1963.

Tugs—continued

4 "Nimble" Class

(22 Nov. 1945) A 508 (23 Oct. 1945) A 293 EXPERT

Dimensions: Machinery:

(1944) A 172 (4 Dec. 1941) A 223

890 tons standard (1,190 tons full load) 165 (pp.), 175 (o.o.) \times 35 $\frac{1}{2}\times$ 13 $\frac{1}{2}$ feet Triple expansion. 2 shafts. I.H.P.: 3,500=16 kts 2, of 3-drum type 300 tons

Boilers: Oil fuel:

eneral Capable was built by Hall Russell, Careful by A. Hall & Co., Expert and Numble by Fleming Ferguson, Launch dates above. Capable was fitted experimentally with controllable & Ferguson. Lau pitch propellers.



EXPERT

1963. A. & I. Pavia

6 "Bustler" Class

 BUSTLER CYCLONE
 (4 Dec. 1941) A 240
 SAMSONIA (1 Apr. 1942) A 218

 CYCLONE (ex-Growler, 10 Sep. 1942) A 111
 TURMOIL (14 July 1944) WARDEN (28 June 1945) A 309

Displacement: Displacement:
Dimensions:
Machinery:
Oil fuel:
Range:
Complement:

1,118 tons standard (1,630 tons full load)
190 (pp.), 205 (o.a.) × 40½ × 16½ feet
2 Atlas Polar 8-cyl. diesels. I shaft, B.H.P.: 4,000=16 kts.
405 tons
17,000 miles

General

All built by Henry Robb, Ltd., Leith. Launch dates above. Growler, temporarily renamed Caroline Moller, while on long term charter, then renamed Castle Peak, was returned to R.F.A. service in 1957, then renamed Welshman and chartered to the United Towing Co. Ltd., and again renamed Cyclone on return to Royal Fleet Auxiliary service in 1964. Most of this class, including Reward, to United Towing Co. Ltd. in 1963, and Turmoil, to Overseas Towage & Salvage Co., have been chartered by commercial undertakings. Bustler wears the Blue Ensign. Of this class, the Hesperia was lost during the Second World War, and H.M.S. Mediator, the last tug to sail under the White Ensign and not the Blue Ensign of the Royal Fleet Auxiliary Service, was paid off in 1964 to ba sold.



Added 1964, A. & I. Pavia

"Assurance" Class 8

ANTIC (Mar. 1943) A 141
CAUTIOUS (ex-Prudent, Aug. 1940) A 385
EARNER (ex-Ernest, July 1943) A 209
HENGIST (Dec. 1941) A 110
Displacement: 700 tons (1,055
Measurement: 597 tons gross
Dimensions: 142½ (pp.), 157 (o.d.)×33×14½ feet
Machinery: Roller: 1 cylindrical
Boiler: 1 cylindrical

1 cylindrical 262 tons Boiler: Oil fuel: Complement:

General All built by Cochrane & Sons, Ltd., Selby. Launch dates above. In wartime these ships carried 1—3 inch AA. guns, 1—20 mm. AA. gun and 2 M.G. Second World War losses of the class were Adept, Adherent (original). Assurance, Horsa and Sesame. Assiduous was transferred to Ceylon in 1959. Adherent (the second) and Tryphon were disposed of in 1960. Alligator was sold in 1961. Allegiance was lost in a typhon on 4 Sep. 1962 while under charter.

Other Tugs

There are a number of other tugs employed on harbour service and in H.M. Dochyards, including the new diesel-electric paddle tugs Dexterous, Director, Faithful, Favousite, Forceful, Grinder and Griper; the twinscrew diesel dockyard tugs Accord, Adept, Agile and Advice; the medium berthing tugs Alredale, Alsation, Boxer, Coirn and Dalmation ("Dog" class): and the harbour berthing tugs Agatha, Agnes, Alice, Audrey and Betty ("Giri" class).

Also the small fleet servicing and coastal harbour tugs Empire Ace (ex-Diligent). Empire Demon, Empire Fred, Empire Netta, Empire Rosa, Energetic (ex-Empire Edward) and Frisky (ex-Empire Rita). not all of the same type. Empire Plane was sold in 1958, and Empire Zona was deleted from the list.

The following tugs are also in the Port Auxiliary Service:—Bombshell, Cannon, Chalnshot, Destiny, Diver, Driver, Eminent, Energy, Expeller, Fidget, Flamer, Foremost, Freedom, Grapeshot, Handmaid, Impetus, Integrity, Prompt, Regard, Resolve, Security, Tampeon, Trunnion, Vagrant, and Weasel.

LIST OF PENNANT NUMBERS

A few of the ships listed below are on the sales list or have been earmarked for disposal, but their pennant numbers have been retained in this edition for reference and identification until they are actually broken up; and a few ships listed are not yet completed.

The pennant numbers of many submarines were changed on 1 May 1961, several "A" class and "T" class boats in the S09 to S27 range having been renumbered in the S61 to S74 range to enable all the post-war built conventional submarines to be numbered from S01 to S20 and onwards. Nuclear-powered submarines were at the same time renumbered in a new S101 series.

Aircraft Carriers, Submarines, Cruisers, Destroyers, Frigates, Minelayers, etc.

	B Elas Sumanian	F Flag Superior:	F. Flag Superior:
5 Flag Superior:	R Flag Superior: R 05 Eagle	F 08 Urania	F 99 Lincoln
S OI Porpoise	R 05 Eagle R 06 Centaur	F 09 Troubridge	F 101 Yarmouth
S 02 Rorqual	R 07 Albion	F 10 Aurora	F 102 Zest
S 03 Narwhal		F #4 Leopard	F 103 Lowestoft
S 04 Grampus		F 15 Euryalus	F 104 Dido
S 05 Finwhale	,	F 18 Galacea	F 106 Brighton
S 06 Cachalot	R 12 Hermes		F 107 Rothesay
S 07 Sealion	R 38 Victorious	F 19 Terpsichore F 26 Petard	F 108 Londonderry
S 08 Walrus	C Flag Superior:		'
S 09 Oberon	C 20 Tiger	,	F 109 Leander F 113 Falmouth
S 10 Odin	C 24 Sheffield	F 28 Cleopatra F 29 Verulam	F 114 Ajax
S II Orpheus	C 34 Lion	. 27 Verutain	
S 12 Olympus	C 35 Belfast		
S 13 Osiris	C 99 Blake		F 117 Ashanti F 119 Eskimo
S 14 Onslaught	D Flag Superior:	1	F 121 Tumult
S I5 Otter	D 01 Caprice		F 122 Gurkha
S 16 Oracle	D 12 Devonshire	F 38 Arethusa F 39 Naiad	F 124 Zulu
S 17 Ocelot	D 05 Daring		F 125 Mohawk
\$ 18 Otus	D 06 Hampshire		
\$ 19 Opossum	D 07 Caesar	F 41 Volage	F 126 Plymouth
S 20 Opportune	D 09 Dunkirk	F 42 Phoebe	F 127 Penelope
S 21 Onyx	D 10 Cassandra	F 43 Torquay	F 129 Rhyl
\$ 28 Token	D 12 Kent	F 44 Tenacious	F 131 Nubian
S 32 Tiptoe	D 15 Cavendish	F 45 Minerva	F 133 Tartar
S 33 Trump	D 16 London	F 47 Danae	F 138 Rapid
S 34 Taciturn	D 19 Glamorgan	F 48 Dundas	F 142 Brocklesby
S 35 Tapir	D 20 Fife	F 50 Venus F 51 Grafton	F 156 Tuscan F 159 Wakeful
S 37 Talent	D 22 Aisne	F 51 Grafton F 52 Juno	F 159 Wakeful F 185 Relentless
5 38 Teredo	D 25 Carysfort	F 53 Undaunted	F 187 Whirlwind
S 40 Excalibur	D 31 Broadsword	F 54 Hardy	F 189 Termagant
S 41 Alaric	D 32 Camperdown	F 56 Argonaut	F 193 Rocket
S 42 Tabard	D 35 Diamond	F 59 Chichester	F 196 Urchin
S 43 Amphion	D 43 Matapan	F 61 Llandaff	F 197 Grenville
S 47 Astute	D 44 Lagos	F 62 PeNew	F 200 Ursa
S 49 Artemis	D 60 Sluys	F 63 Scarborough	F 390 Loch Fada
S 53 Truncheon	D 61 Chequers	F 65 Tenby	F 428 Loch Alvie
S 55 Thermopylae	D 64 Scorpion	F 67 Tyrian	F 429 Loch Fyne
S 61 Acheron	D 68 Barrosa	F 72 Wizard	F 628 Loch Killisport
S 62 Aurochs	D 70 Solebay	F: 73 Eastbourne	F 645 Loch Ruthven
S 63 Andrew	D 73 Cavalier	F 76 Virago	F 647 Alert
S 64 Anchorite	D 77 Trafalgar	F 77 Blackpool	N Flag Superior:
S 65 Alcide	D 84 Saintes	F 78 Blackwood	N II Minstrel
S 66 Alderney	D 85 Cambrian	F 80 Duncan	N 12 Gossamer
S 67 Alliance	D 86 Agincourt	F 83 Ulster	N 13 Miner III
S 68 Ambush	D 96 Crossbow	F 84 Exmouth	N 16 Miner VI
S 69 Auriga	D 97 Corunna	F 85 Keppel	N 17 Miner VII
S 72 Aeneas	D 106 Decoy	F 88 Malcoim	N 18 Mindfut
5 77 Tireless	D 108 Dainty	F 91 Nurray	N 26 Plover
S 96 Artful	D II4 Defender D II9 Delight	F 94 Palliser	N 70 Manxman
5 101 Dreadnought	D 126 Diana	. F 97 Russell	K Flag Superior:
5 102 Valiant	D 154 Duchess	F 98 Orwell	K 07 Lofoten
S 103 Warspite	P 127 PULITUS	•	
	1		1

PENNANT NUMBERS—continued

Support Ships, Landing Ships, Coastal Minesweepers, Inshore Minesweepers, etc.

	A Flag Superior:	L Flag Superior:	M Flag Superior:	M Flag Superior
Ą	84 Reliant	L 10 Fearless .	M 1150 Invermoriston	M 2002 Aveley
A	108 Triumph	L II Intrepid	M II51 Iveston	M 2003 Brearley
Ą	133 Hecla	L 369 Meon	M 1153 Kedelston	H 2004 Brenchley
A,	134 Rame Head	L 3003 Anzio	M 1154 Kellington	M 2005 Brinkley
A	137 Hecate	L 3016 Dieppe	M 1155 Monkton -	M 2007 Watchful
Ą	144 Hydra	L 3043 Messina	M 1156 Kemerton	M 2008 Squirrel
A	146 Protector	L 3044 Narvik	M 1157 Kirkliston	M 2009 Chailey
Ą	158 Duncansby Head	L 3515 Stalker	M 1158 Laleston	M 2010 Isis
A,	160 Fort Dunvegan	L 3516 Striker	M 1159 Lanton	M 2603 Arlingham
Ą	164 Adamant	M Flag Superior:	M 1160 Letterston	M 2614 Bucklesham
A	185 Maidstone	M 1101 Coniston	M II61 Leverton	M 2616 Chelsham
Ą	186 Fort Rosalie	M 1103 Kilmorey	M 1162 Kildarton	M 2618 Cobham
A	187 Forth	M 1104 Alverton	M 1164 Maddiston	M 2619 Darsham
Ą	191 Berry Head	M 1105 Clyde	M 1165 Maxton	M 2620 Davenham
Ą	194 Tyne	M I 106 Appleton	M 1166 Nurton	M 2621 Dittisham
Ą	200 Vidal	M IIO7 Beachampton	M 1167 Repton	M 2622 Downham
Ą	225 Mull of Kintyre	M II08 Bevington	M 1169 Penston	M 2624 Elsenham
Ą	229 Fort Duquesne	M 1109 Killiecrankie	M 1170 Picton	M 2626 Everingham
Δ,	230 Fort Langley	M IIIO Bildeston	M 1173 Mersey	M 2628 Flintham
Α,	231 Reclaim	M III2 Warsash	M 1174 Puncheston	M 2629 Damerham
Ą	236 Fort Charlotte	M III3 Brereton	M 1175 Northumbria	M 2630 Fritham
A,	262 Hartland Point	M 1114 Brinton	M 1176 Rennington	M 2631 Glentham
Α,	280 Resurgent	M 1115 Bronington	M 1177 Roddington	M 2635 Haversham
Ą	303 Dampier	M 1116 Burnaston	M 1178 Santon	M 2636 Lasham
Δ,	307 Cook	M III7 Thames	M 1179 Sefton	M 2637 Hovingham
A,	311 Owen	M III8 Calton	M 1180 Shavington	M 2706 Ledsham
A,	316 Fort Sandusky	M 1119 Carhampton	M 1181 Sheraton	M 2708 Ludham
A,	329 Retainer	M 1120 Caunton	M 1182 Shoulton	M 2712 Neasham
4	339 Lyness	M 1122 Chilcompton	M 1186 Tariton	M 2713 Nettleham
A	387 Girdle Ness	M 1123 Clarbeston	M 1187 Upton	M 2714 Ockham
Α.	480 Resource	M 1124 St. David	M 1188 Walkerton	M 2716 Pagham
	P Flag Superior:	M 1125 Cuxton	M 1189 Wasperton	M 2717 Fordham
	190 Laymoor	M 1126 Montrose	M 1192 Wilkieston	M 2722 Rackham
	191 Layburn	M 1128 Derriton	M 1193 Wolverton	M 2726 Shipham
•	200 Barfoss	M 1129 Oulston	M 1194 Woolaston	M 2727 Saxlingham
,	201 Barbain	M 1130 Highburton	M 1195 Wotton	M 2728 Shrivenham
	202 Barfoot	M 1131 Hickleton	M 1196 Yarnton	M 2733 Thakeham
1	214 Barbecue	M 1132 Blaxton	M 1198 Ashton	M 2735 Tongham
•	216 Barglow	M 1133 Bossington	M 1199 Belton	M 2737 Warmingham
)	232 Barmond	M 1135 Fenton	M 1200 Soberton	M 2778 Woldingham
•	241 Barnard	M 1136 Curzon	M I202 Maryton	M 2781 Portisham
•	243 Barbican	M 1137 Flockton	M 1203 Dartington	M 2783 Odiham
•	244 Barfield	M 1138 Floriston	M 1204 Stubbington	M 2784 Puttenham
	254 Barrage	M 1140 Gavinton	M I205 Wiston	M 2785 Birdham
1	259 Barrington	M	M 1206 Fiskerton	M 2787 Abbotsham
	261 Bartizan	M 1145 Dufton	M 1208 Lewiston	M 2788 Georgeham
	282 Barfoam	M 1146 Venturer	M 1209 Chawton	M 2790 Thatcham
	284 Moorsman	M 1147 Hubberston	M 1211 Houghton	M 2791 Sandringham
	294 Barfoil	M 1148 Ilmington	M 1216 Crofton	M 2792 Polsham
	297 Barnestone	M 1149 Badminton	M 2001 Dingley	M 2793 Thornham

UNITED STATES NAVY

Administration and Command

Commander-in-Chief:

Commander-in-Chief:
President of the United States Mr. Lyndon B. Johnson.
Secretary of the Navy: Mr. Paul H. Nitze.
Under Secretary of the Navy: Mr. Robert H. B. Baldwin.
(There are three Assistant Secretaries of the Navy).

(There are three Assistant Secretaries of the Navy).

Chief of Naval Operations:
 Admiral David L. McDonald, U.S.N.

Vice-Chief of Naval Operations:
 Admiral Horacio Rivero, Jr., U.S.N.
 (There are six Deputy C.N.O.s and 14 Assistant C.N.O.s.

Commander-in-Chief, U.S. Atlantic Fleet:
 Admiral Thomas H. Moorer, U.S.N.

Commander-in-Chief, U.S. Pacific Fleet:
 Admiral Roy L. Johnson, U.S.N.

Naval Attache and Naval Attache for Air in London:
 Rear-Admiral J. W. O'Grady, U.S.N.

British Naval Attache in Washington:
 Rear-Admiral Peter M. Compston.

Strength of United States Navy

attack aircraft carriers 35 frigates (destroyer leaders) autack aircraft carriers 350 amphib. assault ships (carriers) 10 aircraft transports (carriers). 264 aircraft ferry ships (carriers). 350 destroyers. destroyer minelayers. destroyer escorts. 8 des. esc. transports. escorts. communication ships (carriers) 10 nuclear submarines. 220 70 mine craft. submarines. patrol vessels. 16 battleships. command ships. heavy cruisers. gunboats. fast patrol boats. 260 amphibious craft.

21 light cruisers.

480 fleet auxiliaries. 1,390 service craft.

Total: 3,400.

Operational: 1,549 on 30 June 1966 (593 warships and 956 other naval vessels) comprising 902 in commission (410 warships, 140 amphibious vessels and 352 support ships) and 647 in reserve (183 warships and 464 other types including patrol vessels). Official figures.

Ships

All ships are painted light grey overall, except submarines, most of which are painted black, with large serial numbers on the bows, except aircraft carriers.

Aircraft carriers are differentiated by their serial numbers painted on the funnels and identified from the air by the same figures painted prominently on the flight deck forward and aft.

Destroyers carry numbers on their bows, on their sterns, and also on their helicopter platforms for identification from the air.

Submarines carry numbers on their "sails" or conning towers and also on their bows.

Personnel

Navy: 669,992 officers and enlisted men on 30 June 1964; 671,009 on 30 June 1965; 742,134 on 30 June 1966.

Marine Corps: 190,000 officers and enlisted men on 30 June 1964; 190,187 on 30 June 1965; 254,964 on 30 June 1966.

Navy Appropriations

1955:	\$	9,766,000,000	1959:	\$ 11,958,000,000	1963:	\$ 15,270,000,000
		9.648.000.000				
1957:	Ś	10.478.000.000	1961:	\$ 12,276,411,000	1965:	\$ 14,809,000,000
1958:	\$	10,696,000,000	1962:	\$ 14,771,000,000	1966:	\$ 14.965,100,000

Nomenclature

Aircraft carriers are named mostly after historical naval vessels or battles; heavy cruisers and light cruisers after large cities; destroyer leaders (frigates) after Admirals; destroyers after officers and enlisted men of the Navy and Marine Corps, Secretaries of the Navy, Members of Congress and inventors.

of Congress and inventors.

Destroyers escort and destroyer escort transports are named after Navy men, Marines, or Coast Guard personnel killed in action during the Second World War.

Submarines are named after fish and marine creatures (ballistic missile submarines after men famous in American history); ocean minesweepers and fleet minesweepers after abstract qualities, etc., and birds; escorts and submarine chasers after small cities and towns. Submarine tenders are named after pioneers in submarine development and mythological characters; destroyer tenders after geographical

Submarine tenders are named after pioneers in submarine development and mythological characters; destroyer tenders after geographical valleys, etc.; repair ships after mythological characters.

Large seaplane tenders are named after sounds and bays; ammunition ships after volcanoes and ingredients of explosives; transports after flag and general officers; Commandants of the Marine Corps and Marine Corps officers attack transports after counties; inshore minesweepers after seaboard features.

Tank landing ships are named after counties; and medium landing

Tank landing ships are named after counties; and medium landing ships, rockets, after rivers.

Small seaplane tenders are named after bays, straits and inlets; sub-Small seaplane tenders are named after pays, straits and injets; submarine rescue vessels after birds; oilers after rivers with Indian names; ocean-going tugs after Indian tribes; and harbour tugs after Indian Chiefs and words of the Indian dialect.

Occasional exceptions to this system will be found.

Ships names are prefaced by "U.S.S." (United States Ship) or "U.S.N.S." (U.S. Naval Ship—ships of the Military Sea Transportation

Service).

Term Naval Plan

Term Naval Plan

By 1971 it is planned that there will be.:
103 nuclear powered submarines, including 41 armed with
Polaris or Poseidon ballistic missiles.
It is intended that eventually there will be:
150 ships with nuclear powered machinery; 200 ships with
surface to air guided missiles; All combatant ships armed
with anti-submarine missiles or equipped with anti-submarine aircraft.

1967 New Construction Programme

Nuclear Powered Attack Aircraft Carrier, CVAN. Nuclear Powered Submarines, SSN. Escort Ships, DE.

10

Dock Landing Ship, LSD.
Tank Landing Ships, LST.
Ocean Minesweepers, MSO.
Ammunition Ships, AE. П

Combat Store Ship, AFS.
Replenishment Fleet Oilers, AOR.

Oceanographical Research Ship, AGOR.
Survey Ships, AGS.
Submarine Rescue Ship, ASR.
Salvage Tugs, ATS.
Fleet Ocean Tug, ATF.

1967 Conversion Programme

Guided Missile Cruiser, CG.

Frigates (Destroyer Leaders), DL.

Destroyers, DD.
Military Sea Transportation Service Tankers, T-AO.

1966 New Construction Programme Nuclear Powered Guided Missile Frigate, DLGN. Nuclear Powered Attack Submarines, SSN. Amphibious Assault Ship, LPH. Amphibious Transport Dock, LPD. Escort Ships, DE. Amphibious Force Flagship, AGC. Dock Landing Ships, LSD. Tank Landing Ships, LSD. Cocan Minesweepers, MSO. Submarine Tender, AS.

10

Submarine Tender, AS. Destroyer Tender, AD. Motor Gunboats, PGM.

Hydrofoil Gunboats, PGH.

Attack Cargo Ship, AKA. Ammunition Ships, AE.

Combat Store Ship, AFS.

Combat Store Ship, AFS.
Fast Combat Support Ship, AOE.
Replenishment Fleet Oilers, AOR.
Fast Deployment Logistic Ships, AG.
Oceanographical Research Ships, AGOR.
Survey Ship, AGS.
Salvage Tug, ATS.

1966 Conversion Programme

Attack Aircraft Carrier, CVA. Guided Missile Cruiser, CG. Guided Missile Frigates, DLG.

Destroyers, DD.
Special Minesweeper, MSS. 5

MSTS Tankers, T-AO.

1965 New Construction Programme

Nuclear Powered Attack Submarines, SSN.

Amphibious Assault Ship, LPH.

Amphibious Transports, Dock, LPD.

Escort Ships, DE.

Amphibious Force Flagship, AGC.

Dock Landing Ship, LSD.

Tank landing Ship, LST.

Fleet Ballistic Missile Submarine Tender, AS(FBM). (Deferred).

Fleet Ballistic Missile Submarine Tende Submarine Tender, AS. Destroyer Tender, AD. Motor Gunboats, PGM. Attack Cargo Ships, AKA. Ammunition Ships, AE. Combat Store Ships, AFS. Fast Combat Support Ship, AOE. Replenishment Fleet Oilers, AOR. Oceanographic Research Ships, AGOR. Surveying Ships, AGS.

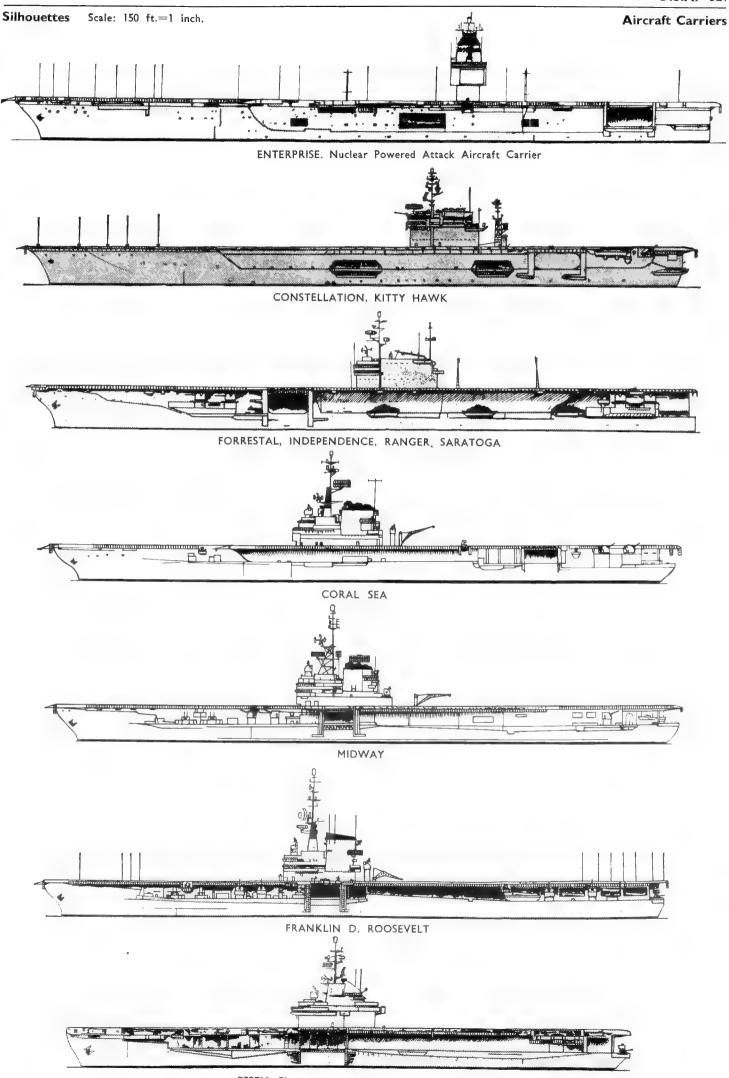
1965 Conversion Programme

Transport Submarine, APSS.
Fleet Ballistic Missile Resupply Cargo Ship, AK (FBM).

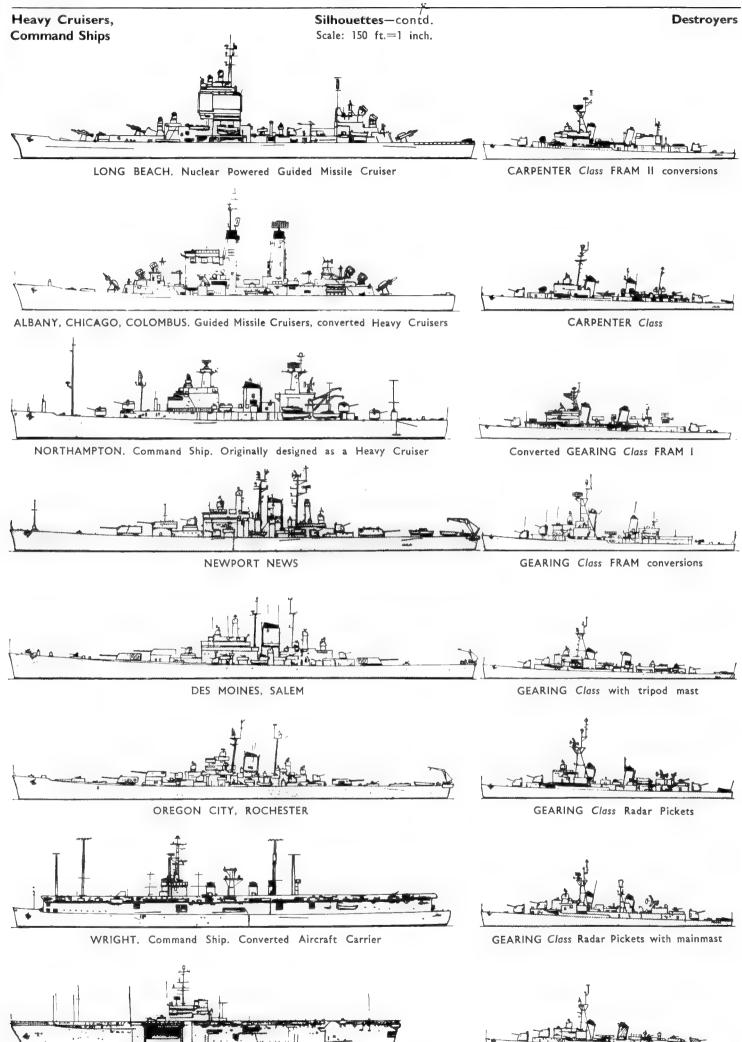
Oilers-Jumboize, AO. MSTS Tankers, T-AO.

Mercantile Marine

Lloyd's Register of Shipping: Sea 3,111 vessels of 19,514,256 tons, gross. Great Lakes. 305 vessels of 2,013,093 tons, gross. Total 3,416 vessels of 21,527,349 tons, gross.



ESSEX Class with angled deck enclosed bow



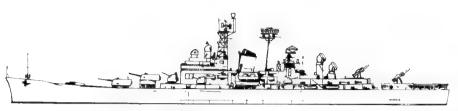
ALLEN M. SUMNER Class with tripod

IWO JIMA Class, Amphibious Assault Ship, (Helicopter Commando Carrier)

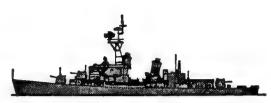
Silhouettes—contd.

Scale: 150 ft.=1 inch.

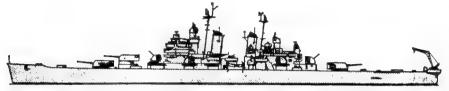
Destroyers



BOSTON (no helo deck), CANBERRA. Guided Missile Heavy Cruisers. Converted



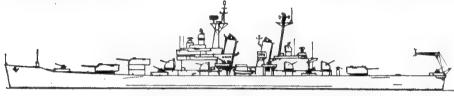
ALLEN M. SUMNER Class FRAM Conversions



BALTIMORE Class, Heavy Cruisers



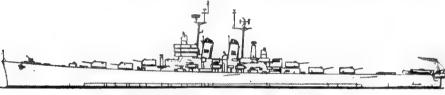
JOHN W. THOMASON (prototype FRAM)



HELENA, ST. PAUL. Heavy Cruisers



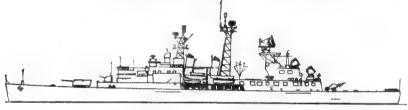
FLETCHER Class FRAM Conversions



ROANOKE, WORCESTER. Large Light Cruisers

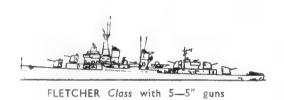


FLETCHER Class with 4-5" guns



LITTLE ROCK, OKLAHOMA CITY. Guided Missile Light Cruisers.

Converted



PROVIDENCE, SPRINGFIELD Guided Missile Light Cruisers, Converted



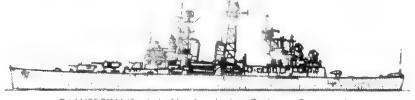
FLETCHER Class (Later Earlier vessels higher fire control)



TOPEKA Guided Missile Light Cruiser. Converted



Converted FILETCHER Class with polemast



GALVESTON Guided Missile, Light Cruiser, Converted

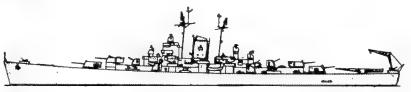


Converted TITTEHER Class V + 1 ...

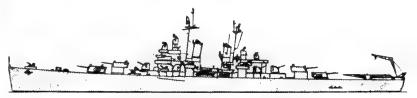
Cruisers, Destroyers

Silhouettes—contd.
Scale: 150 ft.=1 inch.

Destroyer Escorts



FARGO. Light Cruiser



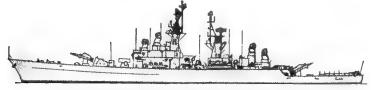
CLEVELAND Class. Light Cruisers



BAINBRIDGE. Nuclear Powered Guided Missile Frigate (Destroyer Leader)



NORFOLK. Frigate, ex-Anti-Submarine Light Cruiser



LEAHY Class. Guided Missile Frigates (Destroyer Leaders)



BELKNAP Class. Guided Missile Frigates (Destroyer Leaders)



MITSCHER Class. Frigates, ex-Destroyer Leaders



CHARLES F. ADAMS Class. Guided Missile Armed Destroyers



FORREST SHERMAN Class. Large Destroyers



BRONSTEIN Class



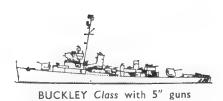
CLAUD JONES Class



RUDDEROW Class



JOHN C. BUTLER Class



BUCKLEY Class as Radar Picket



EDSALL Type as Radar Picket



Fast Transports. Ex-Destroyer Escort

NUCLEAR POWERED ATTACK AIRCRAFT CARRIER (CVAN)

Builders Newport News S.B. & D.D. Co. Engineers Laid down Completed 20 Dec. 1961 Launched No. CVAN 65 ENTERPRISE 4 Feb. 1958 Westinghouse Electric 75,700 tons standard (85,350 tons full load)
Length: 1,040 (pp.), 1,102 (o.a). feet. Beam: 133 feet (hull). Width: 257 feet (exterme) Draught: 37 feet. Hangar height: 25 feet. Area of flight deck: 4½ acres 100 to 70 (more or fewer, according to size and type) 2 twin "Terrier" ship-to-air launchers to be added 4 of C-13 steam type Displacement: Dimensions: Aircraft: Guided missiles; launchers to be added 4 of C-13 steam type 8 pressurised water cooled A 2 W nuclear reactors. Geared steam turbines. 4 shafts. S.H.P.: 300,000=33 kts. (35 kts. max). 400,000 miles at 20 kts.; 140,000 miles at full speed Allowance: 120 officers, 2,750 men (4,300 including air wing). Accomodation for 414 officers, 4,260 men. Catapults:

General

Machinery:

Radius: Complement:

The world's largest aircraft carrier ever built. Provided under the Fiscal Year 1958 Shipbuilding Programme. Advance design and procurement of this first nuclear powered attack aircraft carrier ordered on 16 Aug. 1957 was provided in the Fiscal Year 1957 Appropriations. Block island superstructure, no funnels, four deck-edge lifts, three on the starboard side, one on the port. Almost unlimited steaming endurance at high speed without regard to conserving fuel. Capable of steaming for five years without refuelling. Cruising range is equivalent to twenty times around the world. Able to carry twice as much aviation fuel as the "Forrestal" class. An additional 4,000 sq. ft, of flight deck permits operation of more and larger aircraft. With nuclear propulsion the ship required no funnels or uptakes, and this reduced the superstructure to improve radar capabilities and simplify damage control. Absence of smoke stacks and boiler air intakes reduces the vulnerability of the power plant to battle damage and eliminates the possibility of radioactivity or biological agents entering the ship. A "stackless" ship also allows an island configuration facilitating the installation of new high performance radar. Four fixed antennae built into the sides of the island superstructure double former radar ranges. Cost \$444,000,000 (about £158,570,000). £158,570,000).

Engineering

Engineering

The nuclear plant was designed and developed by the Atomic Emergy Commission at Bettis, in co-operation with the Navy. Westinghouse obtained the contract to design and furnish the reactor compartment components and build built the steam propulsion machinery on 17 Dec. 1957. There are two reactors for each of the four shafts. The eight reactors feed 32 heat exchangers (8×37.500=300,000). The first reactor became critical on 2 Dec. The ship refuelled for the first in 1964 during a seven-month overhaul.

Debloyment

Enterprise was transferred to the Pacific Fleet in 1965.

Photographs

Starboard quarter oblique aerial views and a port bow oblique aerial appear in the 1962-63 to 1964-65 editions, and starboard bow oblique aerial view in the 1962-63 to 1965-66 editions

Second Nuclear Powered Aircraft Carrier

Second Nuclear Powered Aircraft Carrier In July 1965 a design contract for \$1,920,000 was awarded to Newport News Shipbuilding & Dry Dock Co. for a nuclear powered attack aircraft carrier, CVAN. Construction authorised in Fiscal Year 1957. May be named after Fleet Admiral Chester W. Nimitz. To displace about 64,000 tons standard and to cost \$400,000,000 (£142,857,000). Two more CVANs are in project. in project.



ENTERPRISE

1965, United States Navy, Official



ENTERPRISE

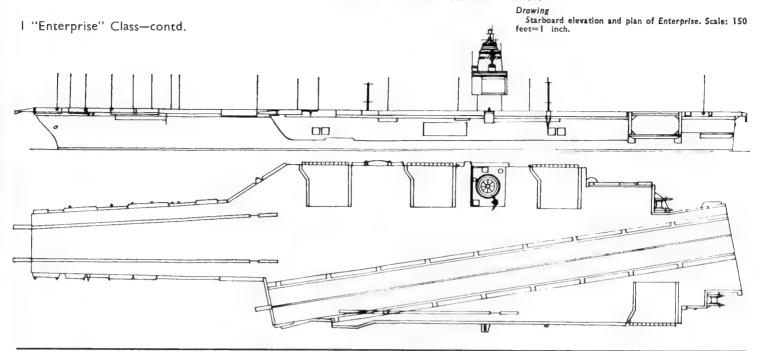
1965, United States Navy, Official



ENTERPRISE

1966, United States Navy, Official

Nuclear Powered Attack Aircraft Carrier-contd.



ATTACK AIRCRAFT CARRIERS

AMERICA JOHN F. KENNEDY

No. CVA 66 CVA 67

Builders Newport News S.B. & D.D. Co. Newport News S.B. & D.D. Co.

Laid down 9 Jan. 1961 22 Oct. 1964

Launched I Feb. 1964

 Completed 23 Jan. 1965

2 "America" Class

Displacement:

Dimensions:

Aircraft:

Catabults:

Machinery: Complement:

Boilers:

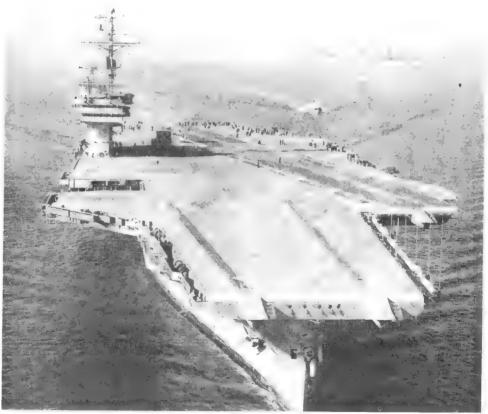
Guided missiles:

America' Class

64,000 tons standard (77,600 tons full load)
John F. Kennedy: 80,700 tons full load
Length: 990 (pp.), 1,047½ feet (o.a.). Beam: 252 feet. Draught: 37 feet.
Area of flight deck: 4½ acres 90 including 3 Attack (VA) and 2 Fighter (VF) squadrons America: 2 twin "Terrier" launchers: John F. Kennedy: 2 twin "Tartar" launchers: 4 of C-13 steam type 4 geared steam turbines. 4 shafts. S.H.P.: 280,000-35 kts. 8 Foster Wheeler 1,200 lb.sq.in 120 officers, 2,550 men (4,965 including air wing)
Accommodation for 420 officers 4,200 men

Conventionally powered. America was authorised under the 1961 new construction programme. Cost \$293,000,000 (\$156,500,000 for hull and machinery). Main differences between America (also CVA 63, 64) and the "Forrestal" class are the different elevator arrangements with two lifts before the bridge on the starboard side and one on the after quarter on the port side; and a more streamlined island. Commissioned on 23 Jan. 1965. Atlantic Fleet. The construction of John F. Kennedy, authorised two years before, was awarded to Newport News in Apr. 1964. To be launched on 1 Apr. 1967 and completed by 29 Apr. 1968. Cost \$227,198,000.

Electronics
The design embodies many of the electronic systems of the nuclear powered aircraft carrier Enterprise. These include an improved long-range search radar system, the automatic aircraft landing system, bow mounted SQS-23 sonar and the Naval Tactical Data System.



AMERICA

1965, United States Navy, Official



AMERICA

1965, United States Navy, Official

Attack Aircraft Carriers-contd.

6 "Forrestal" Group

Displacement:

Dimensions:

60,000 tons standard (76,000 tons full load) except Forrestal, 59,650 tons standard (75,900 tons full load). Constellation 99,000 tons full load, Kitty Hawk 76,700 tons full load Length: 990 (pp.), 1,039 (o.a.) Forrestal, 1,045% (o.a.) Saratoga, 1,046 (o.a.) Ranger, Independence, 1,062% (o.a.) Kitty Hawk, 1,072% (o.a.) Constellation feet. Beam: 129% (hull). Width: 252 feet (flight deck); Ranger and Constellation 260 feet (extreme) Draught: 37 feet
Area of flight deck: 4-1 acres 4—5 inch. 54 cal, dual purpose (no guns in Constellation and Kitty Hawk) see Gunnery 2 twin "Terrier" launchers in Kitty Hawk and Constellation 90 to 60 (more or fewer according to size and type) 4 steam 4 geared turbines, 4 shafts. S.H.P.: 260,000 (in Forrestal)=33 kts. Others 280,000=35 kts. (Independence 36 kts., Constellation 34 kts.) 8 Babcock & Wilcox (Foster Wheeler in Constellation and Kitty Hawk) 1,200 lb, sq. in. 7,828 tons 5,882 tons Allowance: 119 officers, 2,540

Guns:

Guided missiles: Aircraft.

Catapuits: Machinery:

Boilers:

Oil fuel: Aviation fuel: Complement: 7,828 tons
5,882 tons
Allowance: 119 officers, 2,540
men excluding air group personnel). Accommodation for 428
officers, 4,155 men (Kitty Hawk
class); 442 officers, 3,360 men
(Forrestal class) See Complement
notes

notes General

General
Forrestal (contract awarded on 12 July 1951) was named after the Secretary of Defence who was in office when the subsequently cancelled Heavy Carrier United States (CVA 58) was named in 1949. Ranger authorised in 1954 Fiscal year: contract awarded 2 Feb. 1954. Independence authorised in 1955 Fiscal year. Kitty Hawk, named for the site where the Wright brothers made their historic flights, was first tentatively to have been named Congress. Cost \$218,000,000 (Forrestal), \$209,700,000 (Sataroga), \$182,000,000 (Ranger), \$189,311,000 (Independence) and \$200,000,000 (Constellation), Independence commissioned on 10 Jan. 1959, Kitty Hawk on 2 Apr. 1961 and Constellation on 27 Oct. 1961. During a 6-months overhaul of Ranger in 1963-64 eight feet was added to angled deck width to accommodate newer aircraft. Construction

to angled deck width to accommodate newer aircraft. Construction
Four deck edge elevators, Flight deck about 80 feet longer than that in the "Midway" class to operate larger, heavier carrier-based maval aircraft of the newest designs. Increased catapult and arresting capacity, larger elevators, higher hangar decks, mirror sight to aid in landing on aircraft, added armour and improved underwater protection. The flight deck is a strength deck by reduction of the opening in the hangar sides, bow enclosed up to the flight deck for seaworthiness in all types of weather, island acoustically constructed to block out external noise, air-conditionted berthing quarters, three rudders. Overhaul

It is reported that during her 1965 overhaul the displacement of Constellation was increased to 99,000 tons full load and the overall length to 1,072 feet 7 inches, 25 feet longer than listed by builder and 10 feet longer than Kitty Hawk, and NTDS and SINS systems were fitted. Comblement

The complement is being increased by 400 to 800 men per ship for support of new aircraft maintenance.

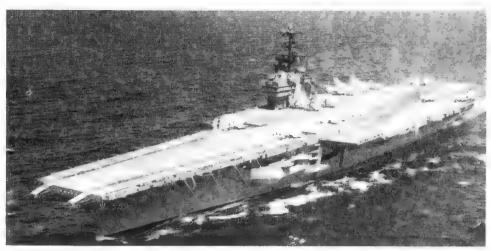
men per ship for support of new aircraft maintenance. Gunnery
The forward gun sponsons were removed from Forrestal, Independence, Ranger and Saratoga. The sponsons
interfered with operations during heavy weather, tending
to slow the ship down. The sponsons contained 2—5
inch guns each, thus the armament has been halved,
only 4—5 inch mounts remaining in the two after
sponsons. Sponsons were not built on Constellation
and Kitty Hawk.

4 "Forrestal" Class

	No.	Builders	Laid down	Launched	Completed
FORRESTAL	CVA 59	Newport News S B. Co.	14 July 1952	11 Dec. 1954	1 Oct. 1955
SARATOGA	CVA 60	New York Naval Shipyard	16 Dec. 1952		14 Apr. 1956
RANGER	CVA 61	Newport News S B. Co.	2 Aug. 1954		10 Aug. 1957
INDEPENDENCE	CVA 62	New York Naval Shipyard	1 July 1955	6 June 1958	3 Apr. 1959

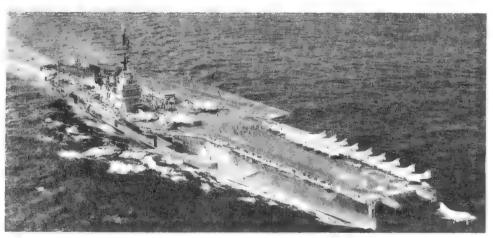
2 "Kitty Hawk" Class

KITTY HAWK CONSTELLATION York S.B. Corp., N.J. York Naval Shipyard 27 Dec. 1956 14 Sep. 1957 21 May 1960 8 Oct, 1960



RANGER

1965. United States Navy, Official



INDEPENDENCE

1965, United States Navy, Official

Engineering
Two propellers are 4-bladed and two 5-bladed, Kitty
Hawk has four 5-bladed propellers.

Appearance
Mast configurations differ. Two masts in Forrestal, one in others. In the last two ships, Kitty Hawk and Constellation, the island is smaller and further aft than the superstructure in the first four, and the lifts are disposed two before the island and one abaft the island on the starboard side, and one on the after quarter on the port side, compared with two abaft the island and one before the island on the starboard side, and one on the forward quarter on the port side in the first four ships.

Photographs

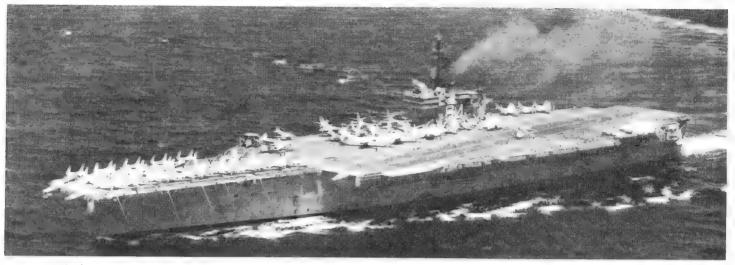
Port bow aerial view of Ranger in 1957-58 to 1961-62 editions. Port bow aerial view of Independence in 1959-60 to 1962-63 editions. Port bow oblique aerial view of Kitty Hawk in 1961-62 and 1962-63 editions. Starboard bow aerial view of Forrestal in 1958-59 to 1963-64 editions. Counter aerial view of Kitty Hawk showing mast hinged down in 1961-62 to 1963-64 editions. Port quarter surface view of Saratoga in the 1958-59 to 1964-65 editions. Starboard broadside aerial view of Independence in the 1959-60 to 1964-65 editions. Starboard bow oblique aerial view of Kitty Hawk in the 1963-64 and 1964-65 editions. Starboard bow oblique aerial view of Ranger in the 1964-65 edition. Port bow aerial view of Ranger in 1957-58 to 1961-



KITTY HAWK

1965, United States Navy, Official (direct from U.S.S. Kitty Hawk, courtesy of Commanding Officer

Attack Aircraft Carriers-contd.



CONSTELLATION 1965, United States Navy Official "Forrestal" Class-continued Drawing
Starboard elevation and plan of U.S.S. Forrestal,
Scale: 128 feet=1 inch. Forward guns now removed. (3) (3)) 0 0 0

CORAL SEA FRANKLIN D. ROOSEVELT (ex-Coral Sea) MIDWAY

3 "Midway" Class

Franklin D. Roosevelt and Midway 51,000 tons standard, Coral Sea 52,500 tons standard (Midway 62,000 tons full load, Franklin D. Roosevelt 62,674 tons full load, Coral Sea 63,400 tons full load, See Reconstruction notes on following page. Length: 900 (w.l.), 968 (o.a.) feet, Beam: 121 (hull). Width: 174 feet (flight deck), 222 feet (extreme). Draught: 36 feet 4—5 inch. 54 cal. (3—5 inch in Coral Sea); the 22—3 inch. 50 cal. were removed. See Gunnery notes on next page 80 to 50 (more or fewer according to size and type) 3 steam (2 forward only in Franklin D. Roosevelt) Geared turbines G.E. in Franklin D. Roosevelt, Westinghouse in others. 4 shafts. S.H.P.: 212,000=33 kts. 12 Babcock & Wilcox Allowance: 112 officers, 2,475 men (not including air group personnel). Accommodation for 412 officers, 3,550 men igned standard displacement was upently increased considerably as Displacement: Dimensions:

Guns: Aircraft:

Catapults: Machinery:

Boilers:

Complement: General

General

The originally designed standard displacement was
45,000 tons, subsequently increased considerably as
a result of conversion and re-construction with
angled deck, enclosed bow and other modifications
(see Modernisation notes on following page). They
were the most extensively welded ships in the United
States Navy. Cost \$90,000,000 each to build initially.

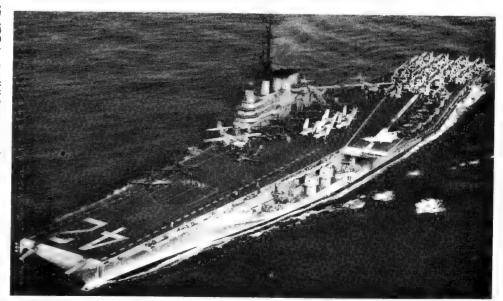
Newport News Co. New York Navy Yard Newport News Co.

No. CVA 43 CVA 42 CVA 41

Laid down 10 July 1944 1 Dec. 1943 27 Oct. 1943

Launched 2 Apr. 1946 29 Apr. 1945 20 Mar. 1945

Completed 1 Oct. 1947 27 Oct. 1945 11 Sep. 1945



FRANKLIN D. ROOSEVELT

United States Navy, Official

Attack Aircraft Carriers-contd.

3 "Midway" Class-continued

Reconstruction
On 13 Feb. 1966 Midway was taken in hand for overhaul at San Francisco Naval Shipyard extending for 30 to 34 months and to cost \$75,000,000. To be fitted with two improved bow catapults, three enlarged and relocated deck-edge elevators, enlarged flight deck, high impact arrestor gear, and computerised Naval Tatic Data System. New dimensions are given as 927×238 feet with a full load displacement of 64,000 tons.

Gunnery
Midway and Franklin D. Roosevelt originally mounted
eighteen 5 inch guns, subsequently fourteen and later
only ten, four on the port side and six on the starboard side. They also had 3-inch twin gun mountings
(now removed) in place of the former 40 mm.
quadruple gun mountings. Six 5 inch were removed
from Franklin D. Roosevelt during her 1936 overhaul.

Aircraft Complement

These three ships could originally carry 137 aircraft, but aircraft were then smaller.

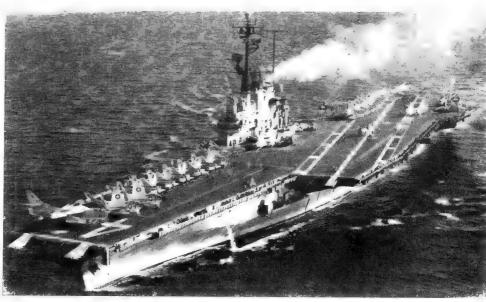
Armour
Protected by heavy armour, intricate water-tight compartments and an improved system of damage control. The armoured flight deck is 932×113 feet in extent and is covered with non-skid surface material: it was strengthened in all three ships during 1947-48, to enable heavier aircraft to be handled.

Flight Deck

The flight deck is officially estimated to cover an area of 3 acres.

Elevators

The triangular section on the forward end of the forward elevators increases the length of the elevators 12 feet along the centreline. The additional length permits easier handling of larger aircraft. Following first modernisation Midway and Roosevelt each had two deck-edge elevators and one centreline elevator. Coral Sea has three aluminium deck-edge elevators.



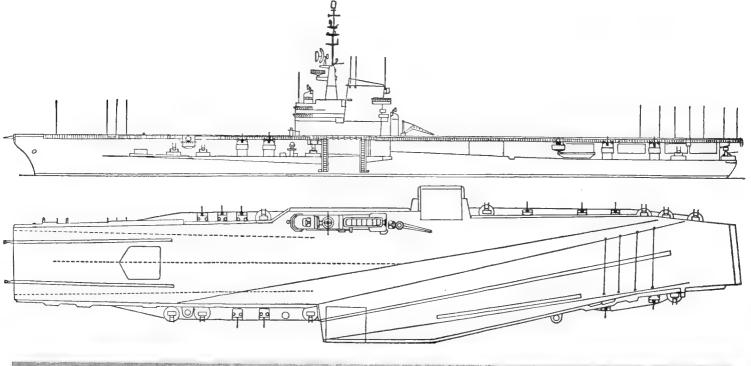
CORAL SEA

1964, United States Navy, Official

Disposition

Coral Sea is in the Pacific Fleet; Franklin D. Roosevelt is in the Atlantic Fleet. Midway is undergoing reconstruction.

Drawing
Port elevation and plan, Scale: 128 feet=1 inch.
This represents Franklin D. Roosevelt. See Gunnery above, and Modernisation and Appearance on next page.





MIDWAY

1965, United States Navy, Official

3 "Midway" Class-continued

Appearance

Appearance Coral Sea and Franklin D. Roosevelt have truncated conical stanchion and pole mast. Midway has lattice mast. Coral Sea differed in her gun layout from the other two. See Gunnery motes on previous page.

Photographs
Starboard bow aerial view and port quarter relative view of Franklin D. Roosevelt after conversion with angle deck and enclosed bow, port bow view of Midway before conversion, and port near broadside view of Coral Sea before conversion, in the 1957-58 edition. Starboard quarter aerial view of Midway in the 1958-59 and 1959-60 editions, starboard quarter surface view of Franklin D. Roosevelt in the 1959-60 edition and counter view of Franklin D. Roosevelt, showing flight deck transom and sponsons, on page 476 (Addenda) of the 1959-60 edition, bow aerial view of Coral Sea in the 1960-61 to 1963-64 editions, and port quarter oblique aerial view in the 1961-62 to 1963-64 editions, Port bow oblique aerial view of Midway in the 1959-60 to 1964-65 editions.

Attack Aircraft Carriers-contd.

Modernisation

Modernisation
Franklin D. Roosevelt was modernised at Puget Sound
Naval Shipyard under the 1954 conversion programme,
with angled deck, enclosed bow, three higher capacity
catapults (steam), increased aviation fuel capacity, and
broader hull, enabling her to handle faster and heavier
jet aircraft. Conversion was completed on 6 Apr. 1956
and cost \$48,000,000. 53 per cent of ship's original
cost. During the 1963 overhaul of Franklin D. Roosevelt
the angled deck catapult was removed and two forward
catapults rebuilt,

Modernisation and conversion of Midway, including Installation of the angled deck, as authorised in the 1954 Fiscal year commenced in Autumn 1955 at Puget Sound Naval Shipyard and was completed on 30 Sep. 1957 when she was recommissioned for duty with the Pacific Fleet. At the end of 1965 Midway is to be taken in hand for further modernisation.

Modernisation and conversion of Coral Sea was authorised in the Fiscal year 1957. Conversion at Puget

Sound Naval Shipyard commenced in Apr. 1957. The forward centreline elevator was replaced by a deck edge elevator on the starboard side forward, while the edge elevator on the starboard side forward, while the port side elevator originally installed was moved aft. Arresting gear and barricades were relocated, and extensive changes made in the hangar bay area. The beam at the waterline was increased by approximately 8 feet. This ship was designed during the Second World War on the basis of experience with the "Essex" class, but was completed too late to see service. This was the first major conversion she underwent, and comprised complete modernisation, including angled deck, hurricane bow and replacement of two hydraulic catapults by three steam catapults. She was recommissioned on 25 Jan. 1960.

Classification

All originally designed as CVB's but were reclassified as Attack Aircraft Carriers, CVA in Oct, 1952.

Three more ships of this class projected were can-celled, CVB 44 in 1943 and CVB 56 and CVB 57 in 1945.

5 "Oriskany" Type (Improved "Essex" Class)

Dimensions:

33,100 tons standard (40,800 to 42,600 tons full load).
Length: 786 (pp.), 840 (w.l.), 898§ (o.a.) feet. Oriskany 904 feet (o.a.) Bon Homme Richard, Shangri-La 889 (o.a.) feet. Flight deck: 876 feet. Hangar: 720 feet. Beam; 101 to 103 (106 Oriskany) feet (hull), 129 feet (over sponsons). Width: Hangar 33 feet (max.); Ship 192 (195½ Oriskany) feet (extreme). Draught: 31 (max.) feet. feet.

Guns:

feet.
4 to 8—5 inch, 38 cal. (7—5 inch in Ticonderoga, see Gunnery); The 28—3 inch, 50 cal. in twin mounts were removed 70 to 60 (more or fewer according to size and type).
2 steam (see Conversion motes) 3 inch sides 3 inch decks
Geared turbines. 4 shafts.
5.H.P.; 150,000=33 kts.
8 Babcock & Wilcox Aircraft: Catapults: Machinery: Boilers: Complement:

5.H.P.: 130,000=33 kts. 8 Babcock & Wilcox Allowance: 100 officers, 1,890 men (not including air group personnel). Accommodation for 340 officers, 2,950 men.

General
Oriskany was the first of a new type to which modified "Essex" class carriers subsequently conformed; her
construction was delayed and she was completed to
a modified design with an improved island, heavier
decks and handling gear to operate bigger aircraft,
larger lifts, more powerful catapults, a stronger
runway and increased stowage for petrol as compared
with the "Essex" class, Bulges offset the extra weight

with the "Essex" class, Bulges offset the extra weight thus added Hancock completed catapult conversion Jan. 1954; first to have new steam catapults and starboard deckedge elevator; first of 27c conversion, Catapult conversion completed in Ticonderoga Apr. 1954. Angled deck and enclosed bow conversion completed in Oriskany 31 Mar. 1959, Angled deck, steam catapult and enclosed bow conversion completed in Shangri-La 1 Feb. 1955, Bon Homme Richard 1 Nov. 1955, Hancock 15 Nov. 1956, Ticonderoga 1 Apr. 1957, Shangri-La has mirror sight landing aid system.

Gunnery
One 5-inch mount was removed from Ticonderoga during her 1962 overhaul.

BON HOMME RICHARD HANCOCK (ex-Ticonderoga) ORISKANY SHANGRI-LA TICONDEROGA (ex-Hancock)

No. CVA 31 CVA 19 CVA 34 CVA 38 CVA 14 Laid down
1 Feb. 1943
26 Jan. 1943
1 May 1944
15 Jan. 1943
I Feb. 1943 Combleted New York Navy Y.
Bethlehem Steel Co.
New York Navy Y.
Norfolk Navy Yard
Newport News S.B. 26 Nov. 1944 15 Apr. 1944 25 Sep. 1950 15 Sep. 1944 10 Oct. 1944



HANCOCK

Photographs

A port bow view of Bon Homme Richard appears in the 1958-59 to 1961-62 editions, and a starboard bow oblique aerial view of Bon Homme Richard in the 1963-64 and 1964-65 editions.

Conversion

Orlskany underwent extensive conversion and mo-dernisation amounting to reconstruction at San Fran-cisco including the following improvements: Angled

deck: Enclosed bow; Arresting gear able to handle larger and heavier aircraft; Two high capacity steam catapults; Increased aircraft elevator capacity and size: Modern Increased aircraft elevator capacity and size: Modern special weapon spaces; Air-to-air missile stowage and facilities; Increased aviation fuel stowage for jet fuel. Flight deck of increased strength to permit landing A3D type aircraft. One third of the deck is of aluminium planking. She was the last of the Second World War built aircraft carriers to receive the angled deck, enclosed bow, and steam catapults. She recommissioned on 7 Mar, 1959.

Added 1965, United States Navy, Official



1962, courtesy Mr. Thomas Moran

Aircraft	Carriors_	contd
MITCHAIL	Carriers-	-contu

	No.	Builders	Laid down	Launched	Completed
ESSEX	CVS 9	Newport News S.B. Co.	28 Apr. 1941	31 July 1942	31 Dec. 1942
YORKTOWN (ex-Bon Homme Richard)	CVS 10	Newport News S.B. Co.	1 Dec. 1941	21 Jan. 1943	15 May 1943
INTREPID	CVS 11	Newport News S.B. Co.	1 Dec. 1941	26 Apr. 1943	
HORNET (ex-Kearsarge)	CVS 12	Newport News S.B. Co.	3 Aug. 1942		16 Aug. 1943
RANDOLPH	CVS 15	Newport News S.B. Co.		29 Aug. 1943	29 Nov. 1943
LEXINGTON (ex-Cabot)			10 May 1943	28 June 1944	9 Oct. 1944
BUNKER HILL	CVS 16	Bethlehem Co. Quincy	15 July 1941	26 Sep. 1942	17 Mar. 1943
	AVT 9 (ex-CV\$ 17)	Bethlehem Co. Quincy	15 Sep. 1941	7 Dec. 1942	24 May 1943
WASP (ex-Oriskany)	CVS 18	Bethlehem Co. Quincy	18 Mar. 1942	17 Aug. 1943	24 Nov. 1943
BENNINGTON	CVS 20	New York Navy Yard	15 Dec. 1942	26 Feb. 1944	6 Aug. 1944
BOXER	LPH 4 (ex-CVS 21)	Newport News S.B. Co.	13 Sep. 1943	14 Dec. 1944	16 Apr. 1945
LEYTE (ex-Crown Point)	AVT 10 (ex-CVS 32)	Newport News S.B. Co.	21 Feb. 1944	23 Aug. 1945	11 Apr. 1946
KEARSARGE	CVS 33	New York Navy Yard	I Mar. 1944	5 May 1945	2 Mar. 1946
ANTIETAM	CVS 36	Philadelphia Navy Yard	15 Mar. 1943	20 Aug. 1944	28 Jan. 1945
PRINCETON	LPH 5 (ex-CVS 37)	Philadelphia Navy Yard	14 Sep. 1943	8 July 1945	18 Nov. 1945
LAKE CHAMPLAIN	CVS 39	Norfolk Navy Yard	15 Mar. 1943	2 Nov. 1944	
TARAWA	AVT 12 (ex-CVS 40)	Norfolk Navy Yard	1 Mar. 1944		3 June 1945
VALLEY FORGE	LPH 8 (ex-CVS 45)	Philadelphia Navy Yard		12 May 1945	8 Dec. 1945
PHILIPPINE SEA (ex-Wright)	AVT 11 (ex-CVS 47)		7 Sep. 1944	18 Nov. 1945	3 Nov. 1946
(0% 17118112)	AVI (1 (ex-CV3 47)	Bethlehem Co. Quincy	19 Aug. 1944	5 Sep. 1945	11 May 1946
18 "Essex" Class	CVS = ASW Support A	Aircraft Carrier LPH =Amp	hibious Assault Ship	AVT =Auxiliary Ai	ircraft Transport

18 "Essex" Class

Displacement:

Dimensions:

Aircraft:

Guns:

Armour:

Machinery:

Boilers: Complement: 'Essex'' Class

30,800 to 33,000 tons standard
(38,500 tons full load)
Length: 786 (pp.), 840 (w.l.),
888 (o.a.), Bunker Hill, 879
(o.a.), Bennington, Lexington,
Tarawa, Valley Forge, 889 (o.a.)
Essex, Intrepld 898 (o.a.) Hornet, Lake Champlain, Wash 899
(o.a.) feet. Flight deck: 876
feet. Hangar: 720 feet
Beam: 93 Hornet, Lake Champlain, Wash 101, Intrepld 103
(hull), 113 feet (over sponsons)
Width: Hangar 93 (max.), Ship
136 feet (extreme). Wash,
Antietam 154 feet (including
angled deck), Intrepld 192 feet
(max.).
Draught: 31 (max.) feet
4 to 8—5 inch, 38 cal. in CVS;
8—5 inch, 38 cal. in LHP 4;
6—5 inch, 38 cal. in LHP 4;
6—5 inch, 38 cal. in LHP 4;
6—5 inch, 38 cal. in LHP 4;
Cuse Gunnery notes next page)
CVS carry 28 fixed wing aircraft, 12 helicopters.
LPH cary about 30 helicopters
3"—2" side amidships, 3" hangar
deck.
1½" flight deck, 1½" upper
deck
Geared turbines. 4 shafts. deck
Geared turbines. 4 shafts.
S.H.P.:150,000=33 kts.
8 Babcock & Wilcox
CV5 Allowance: 87 officers,
1,430 men (excluding air group). 2,500 (with air group).
Accommodation for 340 officers,
2,890 men. 2,890 men.

Accommodation for 340 omcers, 2,890 men.

General

The first ship of this class was ordered in 1940. The designed displacement was 27,100 tons. The original capacity, with smaller aircraft, was 85 to 100, and 107 were carried by close stowage. Essex was built in 20 months, Yorktown in 17½ months. Later ships of this class were of improved design, with stronger flight decks, and more thoroughly sub-divided. CVSs underwent conversion for anti-submarine warfare. LPHs were adapted to carry 30 helicopters and a Marine detachment of 10 officers and 323 men, with accommodation for 1,650 troops, but no structural alterations were made. They could still handle fixed wing aircraft if necessary. Lexington has been the permanent training carrier at Pensacola since Dec. 1962.



WASP

1964, United States Navy, Official

Engineering
In Nov. 1945, Lake Champiain made Atantic crossing from Gibraltar to Newport News in 4 days, 8 hours, 51 minutes, an average speed of 32.048 kts. Philippine Sea made Pacific crossing from Yokohama to San Francisco in 7 days, 13 hours, an average speed of 25.2 kee

Sanar

Sonar
Randolph was fitted with sonar, the first of its type
in any aircraft carrier. Other CVSs are also now fitted
with sonar, or will be fitted, as will most other
aircraft carriers.

Marine Complements

Marine Complements
In addition to their ship's companies of 1,000 officers and men Boxer, Princeton and Valley Forge are capable of carrying a Marine Battalion Landing Team of 1,200 to 1,500 officers and men, plus the crews for 30 to 40 helicopters. helicopters.

A starboard elevation and plan drawing of the improved "Essex" class before conversion to angled deck and enclosed bow, scale 128 feet=1 inch, appears in the 1964-65 and earlier editions.



YORKTOWN

1965, United States Navy, Official

Aircraft Carriers-contd.



BOXER

1965, United States Navy, Official

18 "Essex" Class-contd.

Gunnery

Gunnery

The number of 5-inch guns varies. Randolph has 8—5 inch and Essex 4—5 inch. Yorktown has no 5 inch guns on the starboard side aft. The LPHs are the only ships of this type retaining 5 inch guns on the flight deck (see photograph of Boxer above). The 3 inch guns have been removed to further reduce topside weight.

Conversion

The FRAM II conversion which Randolph underwent
at Norfolk Naval Shippard included closed circuit
television for briefing pilots and a modern combat
information centre for anti-submarine warfare missions.

television for briefing pilots and a modern combat Information centre for anti-submarine warfare missions. Kearsarge was equipped with all aluminium surface to flight deck and aluminium elevators, and was the first aircraft carrier to be so fitted.

Kearsarge underwent FRAM II conversion in 1961-62 and Bennington and Valley Forge in 1963. Boxer and Princeton also completed a 7-month FRAM II conversion. Essex undewent a 6-month modernisation including the installation of sonar.

Wasp was the first modernised carrier to get CVS status. Antietam has an earlier version of the angled deck, the first experimental angled deck installation, a British invention.

The island superstructure of Philippine Sea was modified, funnel and mast being united, with twin clinker screen on the funnel. Princeton and Leyte were similarly modified.

Antietam. Boxer, Bunker Hill, Lake Champlain, Leyte, Philippine Sea, Princeton, Tarawa and Valley Forge never received major modernisation. All except Antietam have their original axial decks. Lake Champlain received an up-dating refit but neither angled deck nor hurricane bow.

All the other nine CVSs were extensively modernised.

plain received an up-dating refit but neither angled deck nor hurricane bow.

All the other nine CVSs were extensively modernised. Intrepid completed catapult conversion in Apr. 1954. Angled deck and enclosed bow conversion completed in Bennington on 1 Apr. 1955, Essex on 9 Mar. 1956, Hornet on 15 Aug. 1956, Kearsarge on 31 Jan. 1957, Randolph on 12 Feb. 1956. Wasp on 1 Dec. 1955, and Yorktown on 14 Oct. 1955. Angled deck, steam catapult and enclosed bow conversion completed in Lexington on 1 Sep. 1955 and Intrepid on 2 May 1957. Most of the 18 ships still have hydraulic catapults. Bunker Hill was towed to San Francisco in 1965 for \$1,250,000 reconditioning, after 18 years in the reserve fleet. Flight deck repaired and 12,000 volt shore electrical system installed. In Sep. 1965 she was towed to Sarv Diego to become experimental ship for Navy Electronics Laboratory in Project Southern Cross (Naval Ships Advanced Communication System), an integrated and coherent system for all electronic gear that a fighting ship needs for modern warfare, and to provide simulated at-sea conditions for tests on newly designed electronics equipment. She will be moored for the entire test period and propulsion equipment will not be activated.

Reclassification
All the above ships originally designated CV, were redesignated CVA (Attack Aircraft Carriers) in Oct. 1952, but Antietam, Bunker Hill and Leyte were again redesignated from CVA to CVS (ASW Support Aircraft Carriers) in July 1953; Princeton and Valley Forge in Jan. 1954; Tarawa on 10 Jan. 1955; Philippine Sea on S Nov. 1955; Boxer on 1 Feb. 1956; Wasp on 1 Nov. 1956; Lake Champlain on 1 Aug. 1957; Yorktown on 1 Sep. 1957; Hornet on 27 June 1958; Kearsarge on 1 Oct. 1958; Randolph on 31 Mar. 1959; Bennington on 30 June 1959; Essex on 8 Mar. 1960; Intrepld on 31 Mar. 1962; and Lexington on 1 Oct. 1962. Boxer and Princeton were reclassified as LPH on 30 Jan. 1959 and 2 Mar. 1959, respectively and Valley Forge on 3 June 1961. Bunker Hill, Leyte ard Philippine Sea were reclassified as AVT on 15 May 1959 and Tarawa in 1961.



INTREPID

1966, Official (direct from U.S.S. Intrepid, courtesy Commanding Officer)



LEXINGTON

1965, United States Navy, Official

Angled Deck
The flight deck of Antietam angles 8 degrees,
9 minutes to port with arresting gear orientated to the
centre line of her angled deck. The angled deck, which
although a British invention, was first installed in
Antietam (in Oct.-Dec. 1962) has since been incorporated into the design of all new aircraft carriers.

The stern of Bennington and other carriers smoothed off and streamlined after remove of 3-inch gun housing and overhanging sponsons.

Photographs

Photographs
Port broadside aerial view of Randolph In the 195758 edition. Port quarter overhead view of Randolph showing angled deck and aircraft, and port bow oblique aerial view of Kearsarge in the 1958-69 and 1959-60 editions. Large starboard broadside view of

Randolph firing a Regulus guided missile, and starboard bow surface view of Tarawa in the 1957-58 to 1959-60 editions. Port bow overhead view of Antletam and starboard broadside surface view of Wasp in the 1953-54 to 1959-60 editions. Aerial broadside view of Philippine Sea with six helicopters flying In formation in the 1957-58 to 1961-62 editions. Port bow oblique aerial view of Bennington, showing hurricane bow and angled deck in the 1961-62 to 1963-64 editions. Port quarter oblique aerial view of Yorktown and port bow oblique aerial view of Essex In the 1959-60 to 1964-65 editions. Port bow oblique aerial view of Valley Forge, showing helicopters ranged on deck, in the 1962-63 to 1965-66 editions.

Disposals

Franklin, AVT 8 (ex-CVS 13) was officially stricken from the List of U.S. Naval Vessels on 1 Oct. 1964.

HELICOPTER CARRIERS (LPH)

6 + I Amphibious Assault Type

10,700 tons light, 17,000 tons standard (18,340 tons full load) Length: 592 (w.f.), 602 (o.a.) feet: Beam: 84 (h.l!), 105 (max.) feet Draught: 26 feet 8—3 inch, 50 cal. (4 twire) 1 Marine Helicopter Squadron of 20 to 24 medium, 4 heavy and 4 observation helicopters. Geared turbines. 1 shaft. S.H.P.: 23,000—20 kts.
2 (Babcock & Wilcox in Guam, Combustion Engineering in Guad-alcanal, Iwo Jima, Okinawa) 528 crew (48 officers, 480 men) plus accommodation for 2,090 troops (190 officers, 1,900 merr) Displacement: Dimensions: Aircraft:

Machinery: Boilers:

Complement:

General

Helicopter carriers designed as amphibious assault ships to support the Marine Corps vertical envelopment concept. They correspond to commando carriers in the Royal Navy. Each carries an assault force of personnel, combat supplies, equipment and transport helicopters. Can carry one Marine battalion landing team. They have command facilities, cargo and material handing equipment and adequate space for embarked troops and vehicles. The flight and hangar deck provide for helicopter operations and maintenance. Two deck-edge elevators. Iwo Jima was the first amphibious assault ship to be built from the keel up for helicopter use. She cost \$40,000,000.

Construction lwo Jima was built under the Fiscal Year 1958
Programme, Okinawa 1959 programme, Guadalcanal
1960 programme. Guam 1962 programme. Tripoli 1963

	No.	Builders	Laid down	Launched	Complete
IWO JIMA	LPH 2	Puget Sound Naval Shipyard	13 Feb 1959	17 Sep. 1960	26 Aug 19
OKINAWA	LPH 3	Philadelphia Naval Shipyard	1 Apr. 1960	19 Aug. 1961	14 Apr. 19
GUADALCANAL	LPH 7	Philadelphia Naval Shipyard	1 Sep. 1961	16 Mar. 1963	20 July 19
GUAM	LPH 9	Philadelphia Naval Shipyard	15 Nov 1962	22 Aug. 1964	16 Jan. 19
TRIPOLI	LPH 10	Ingalls Shipbuilding Corp.	15 June 1964	31 July 1965	Feb. 19
NEW ORLEANS	LPH II	Philadelphia Naval Shipyard	1 Mar. 1966		Feb. 19
	LPH 12	Ingalls Shipbuilding Corp.			



GUADALCANAL

1965, Wright & Logan

programme, New Orleans 1965 programme, and LPH 12 1966 programme. Photographs
A starboard broadside aerial view of Okinawa appears in the 1963-64 to 1965-66 editions.

Nomenclature
Amphibious assault ships are named after battles or operations in which Marine Corps forces made history.

lwo Jima, Okinawa and Guadajcanal are the proto-type class. Guam and Tripoli are a modified class.



OKINAWA

1966, United States Navy, Official



IWO JIMA

1963, United States Navy, Official

Ex-AIRCRAFT CARRIERS

MONTEREY (ex-Dayton)
SAN JACINTO (ex-Reprisal, ex-Newark)

No AVT 2 (ex-CVL 26) AVT 5 (ex-CVL 30) Builders New York S.B. Corpn. New York S.B. Corpn.

Laid down 29 Dec. 1941 26 Oct. 1942

Launched 28 Feb. 1943 26 Sep. 1943

Combleted 17 June 1943 15 Dec. 1943

Aircraft Transports (AVT)

Former Aircraft Carriers (CVL)

2 "Cabot" Class

Displacement:

11,000 tons standard (15,800

Dimensions:

11,000 tons standard (15,800 tons full load)
Length: 600 (w.l.), 623 (o.a.) feet. Beam: 71½ feet (hull). Width: 109 (extreme) feet
Draught: 26 feet
Latterly mounted 28—40 mm.
AA.

Guns:

AA.
Originally carried over 40
G.E. geared turbines. 4 shafts.
S.H.P.: 100,000=32 kts.
4 Babcock & Wilcox
See General notes Aircraft: Machinery:

Boilers: Complement:

General

Completed as aircraft carriers after having been laid down as cruisers of the "Cleveland" class.

Cabot was converted to ASW, i.e. modified to specialise in anti-submarine warfare, and classed as a "Hunter-Killer Carrier" with strengthened flight and hangar decks, large port side catapult, revised magazine arrangements, new electronic gear corrected stability to counter added top weight, and a maximum of 26 aircraft. She was practically modernised to a new type. As aircraft carriers the original complement was 1,109 (159 officers and 950 men) to 1,183 (peace scheme), 1,400 (war scheme). Princeton (ex-Tallahassee) CVL 23, of this class, was lost in action in 1944.

Transfers
Langley was transferred to the French Navy in 1951 under the Mutual Defense Assistance Programme but was returned to the U.S.A. in Mar. 1963, stricken from the Navy List in June 1963, and later scrapped. Belleau Wood (CVL 24), transferred to France in Sep. 1953 on loar for five years, subsequently extended for five more, was returned to the U.S.A. in Sep. 1960 and stricken.

stricken.

Cabot is being reactivated and modernised at Philadelphia Naval Shipyard, scheduled for completion by May 1967, for transfer to Spain as a helicopter

Originally designed to include 4—5 inch guns in amament, but subsequently mounted 16—40 mm. AA. guns and 40—20 mm. AA. guns.

After conversion Cabot had only two of her original

After conversion Cabot had only two of her original four funnels. Monterey also has only two funnels. Reclassification

The ships of this class were reclassified from aircraft carriers (CVL) to auxiliary aircraft transports (AVT) on 15 May 1959.

Drawing

A port elevation and plan, scale 128 feet=1 inch, appears in the 1959-60 and earlier editions. Photographs

rnocographs
A port bow aerial photograph of Monterey appears in the 1957-58 edition, and a port broadside view of Cabot in the 1957-58 to 1965-66 editions.

Disposals
Bataan, AVT 4, was stricken from the Navy list on
1 Sep. 1959 and Cowpens, AVT 1, on 1 Nov. 1959.
Independence CVL 22, was experded in atom bomb
and radiological experiments from 1946 to 30 Jan.
1951.



MONTEREY

United States Navy, Official

Completed

8 Nov. 1942 10 Dec. 1942 12 Apr. 1943 28 Apr. 1943

Aircraft Ferries (AKV)

Former Escort Aircraft Carriers (CVE)

4 "Bogue" Class

Displacement:

9,800 tons standard (15,700

Dimensions:

Guns Aircraft: Machinery: See Gunnery notes
See General notes,
Westinghouse geared turbines
S.H.P.: 8,500=18 kts.

Boilers:

Complement:

9,800 tons standard (15,700 tons full load)
Length: 465 (pp.), 496 (o.a.)
feet. Flight deck: 450 feet.
Beam: 69½ feet (hull), Width:
112 feet (extreme). Draught: 26

feet

2 Foster-Wheeler type (see General notes) CROATAN

CARD

CORE BRETON

All converted from mercantile hulls built by Seattle-All converted from mercantile hulls built by Seattle-Tacoma Shipbuilding Corpn. Vary slightly in appearance. As escort carriers they carried 30 aircraft and had a complement of 800 officers and men. Named after sounds, Equipped with derricks for retrieving seaplanes and loading and unloading aircraft at the pierside. Reclassification

Reclassified from Escort Aircraft Carriers (CVE) to Escort Helicopter Aircraft Carriers (CVHE) on 12 June 1955, to CVU on allocation as MSTS aircraft ferries on 1 July 1958 and to AKV on 7 May 1959.

No.

—AKV 40 (ex-CVU 11, ex-CVHE 11)

—AKV 41 (ex-CVU 13, ex-CVHE 13)

—AKV 42 (ex-CVU 23, ex-CVHE 23)

—AKV 43 (ex-CVU 25, ex-CVHE 25)

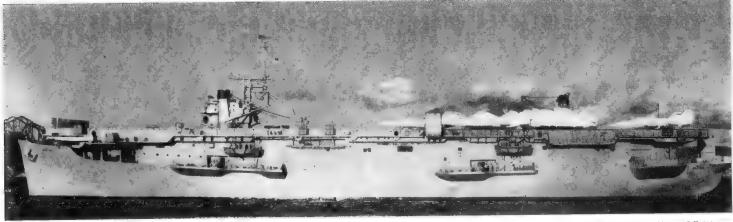
Laid down 27 Oct. 1941 2 Jan. 1942 25 Feb. 1942 15 Apr. 1942

Gunnery
Unarmed while designated USNS with civil service crews. Formerly mounted one or two 5-inch guns, 16—40 mm. AA. guns, and 20—20 mm. AA. guns.

Launched

21 Feb. 15 May 27 June 3 Aug.

40 mm. AA. guns, and 20—20 mm.
Disposals
Sister ships Altamaha CVHE 18, Barnes, CVHE 20,
Bogue, CVHE 9, Copahee, CVHE 12, and Nassau, CVHE
16, also half-sister Prince William, CVHE 31, were
stricken from the Navy list in 1 Mar. 1959.
Of the "Suwanee" class, Chenango, CVHE 28, Santee,
CVHE 29, and Suwanee. CVHE 27 were also stricken
from the Navy list on 1 Mar. 1959.



1964, United States Navy, Official

BRETON

Battleships The battleships IOWA, BB 61, MISSOURI, BB 63, NEW JERSEY, BB 62, and WISCONSIN, BB 64 of the "lowa" class were all decommissioned in 1955-58 and have been laid up ever since. (See full particulars, photographs and drawings in the 1961-62 edition)

photographs and Disposals

The battleships Alabama, BB 60, Indiana, BB 58.

Massachusetts, BB 59, of the "Indiana" Class, and South Dakota, BB 57, were all stricken from the List

of Naval Vessels on 1 June 1962. (South Dakota was sold for scrap in 1964).

The battleships North Carolina, BB 55, and Washing-

ton, BB 55 of the "North Carolina class were stricken from the List of Naval Vessels at the end of 1960. The hattle crusers Alaska, CB 1 and Guam CB 2, of the "Alaska' Class, officially rated as "Large Cruisers", were also stricken in 1960. (Their uncompleted sixter thip Hawali, CB 5, was stricken on

9 June 1958).
The battleships, California, BB 44, and Tennessee, BB 43, of the "Tennessee" class: Colorado, BB 45, and Maryland, BB 46, of the "Colorado" class: and West Virginia, BB 48, were scrapped in 1959 (stricken from the Navy List on 1 Mar. 1959).
(The following are State Battleship Memorials:—Alabama, BB 60; Massachusetts, BB 59; North Carolina, BB 55; and Texas, BB 35)

Ex-Aircraft Carriers-contd.

COMMENCEMENT BAY (ex-St. Joseph's Bay)
ANNAPOLIS (ex-Gilbert Islands, ex-St. Andrew's Bay)
KULA GULF (ex-Vermilion Bay)
CAPE GLOUCESTER (ex-Willapa Bay)
VELLA GULF (ex-Totem Bay)
SIBONEY (ex-Frosty Bay)
RENDOVA (ex-Mosser Bay)
BADOENG STRAIT (ex-San Alberto Bay)
SAIDOR (ex-Saltery Bay)
POINT CRUZ (ex-Trocadero Bay)
BARAIII PARALII TINIAN

CVHE = Helicopter Escort Aircraft Carrier Escort Aircraft Carrier CVE

No. AKV 37 (ex-CVHE 105) Laid down 2.3 Sep. 1943 2.9 Nov. 1943 16 Dec. 1943 10 Jan. 1944 7 Mar. 1944 1 Apr. 1944 15 June 1944 18 Aug. 1944 29 Sep. 1944 29 Jan. 1945 20 Mar. 1945 Completed 27 Nov. 1944 5 Feb. 1945 12 May 1945 5 Mar. 1945 9 Apr. 1945 14 May 1945 22 Oct. 1945 14 Nov. 1945 4 Sep. 1945 16 Oct. 1946 30 Aug. 1946 30 July 1946 Laid down Jauncl 9 May 20 July 15 Aug. 12 Sep. 19 Oct. 9 Nov. 28 Dec. 15 Feb. 17 Mar. 18 May 14 July 5 Sep. Launched Combleted AKV 37 (ex-CVHE 105) AGMR 1 (ex- AKV 39, ex-CVE 107) T-AKV 8 (ex-CVE 108) USNS AKV 9 (ex-CVHE 109) AKV 11 (ex-CVHE 111) AKV 12 (ex-CVE 112) AKV 14 (ex-CVE 114) AKV 16 (ex-CVE 116) AKV 17 (ex-CHVE 117) T-AKV 19 (ex-CVE 119) USNS AKV 21 (ex-CVHE 121) AKV 23 (ex-CVHE 123) 1944 1944 1944 1944 1944 1944 1945 1945 1945 1945

Cargo Ship and Aircraft Ferry AGMR

= Major Communications Relay Ship

II Aircraft Ferries (AKV) I Rated as Major Communications Relay Ship (AGMR)

Former Escort Carriers (CVE, CVHE) 12 "Commencement Bay" Class

Displacement:

Dimensions:

Guns:

11,473 tons standard (24,275 tons full load)
Annapolis 22,500 tons full load)
Length: 557 (o.a.) feet (Annapolis 563 feet). Beam: 75 feet (hull). Width: 105 feet (extreme). Draught 303 feet
1—5 inch, 38 cal., 24—40 mm.
AA. (see Gunnery notes below) (Annapolis 8—3 inch, 50 cal. (4 twin)

Aircraft.

(4 twin) Originally carried 34
Geared turbines 2 shafts, S.H.P.:
16,000=18 kts,

Boilers:

Complement:

4 Annapolis: 710 (44 officers and 666 men). See General Kula Gulf and Point Cruz: 140 officers and men

General
All built by Todd Pacific Shipyard, Tacoma. Their design was modelled on that of "Suwanee" class merchantile hull conversions, see 1958-59 and earlier editions. As escort aircraft carriers their complement was 924 officers and men (peace) and over 1,000 (war). Kula Gulf and Point Cruz were reactivated in 1965 for MSTS operation, and designated T-AKV, USNS, unarmed with civil service crew, and the reactivation of others is in prospect.

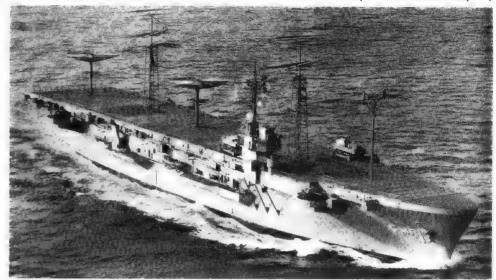
Conversion

Conversion
Gilbert Islands was converted into a Major Communications Relay Ship (AGMR) in the Fiscal Year 1963.
Conversion Programme by New York Naval Shipyard, the contract being awarded on 22 Aug. 1962. She was renamed Annapolis on I June 1963, and recommisioned on 7 Mar. 1964, equipped with 24 radio transmitters. Vella Gulf was to have been converted to AGMR in the Fiscal Year 1964 Conversion Programme; but her conversion was never commenced (she was to have been renamed Arlington), and instead Saipan, see next page, was selected for the second AGMR. The AGMR type is capable of supplying vital communications services in any sea area in the world.

Reclassification

Reclassification
Seven Escort Aircraft Carriers (CVE) of this class were reclassified as Escort Helicopter Aircraft Carriers (CVHE) on 12 June 1955; Block Island was reclassified as LPH on 22 Dec. 1957, but in 1958 her conversion to Helicopter Amphibious Assult Ship was cancelled as a measure of economy and she was reclassified as an AKV on 7 May 1959, when all the remaining 18 ships of the class were also reclassified as AKVs, and stricken on 1 July 1959, Gilbert Islands was reclassified as AGMR on 1 June 1963 and renamed Annapolis.

T indicates assignment to MSTS (Military Sea Transportation Service) and USNS means U.S. Naval Ship.



ANNAPOLIS

1964



SIBONEY

Gunnery

The after starboard 5 inch gun was removed from the active units. No. 1 40 mm, mounting and twelve 20 mm twin mounts latterly carried, instead of the former total of 30, were removed. Four rocket launchers were formerly located amidships, two on each side. Annapolis was rearmed in 1963-64,

Class

Sixteen more ships of this class, Bastogne, Enlwetok, Lingayen, Okinawa, and CVE Nos. 128 to 139, were cancelled in Aug. 1945.

cancelled in Aug. 1945.
Disposals
Block Island, AKV 38 (ex-LPH 1, CVE 106) was
stricken on 1 July 1959. Mindoro AKV 20 (ex-CVE
120) on 1 Dec. 1959 and Bairoko, AKV 15 (ex-CVE
115), Palau AKV 22 (ex-CVE 122), Puget Sound, AKV

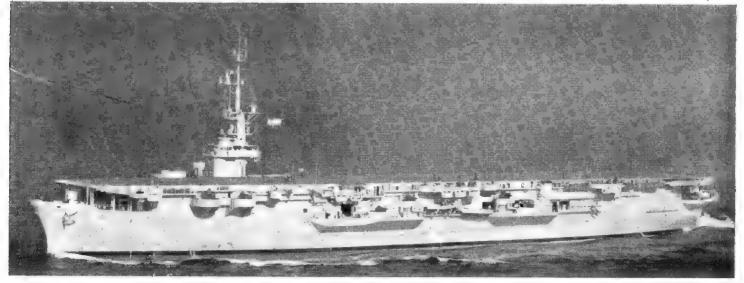
Added 1961, Official

Added 1961, Official

13 (ex-CVHE 113) and Vella Gulf, AKV 11 (ex-CVHE 111) in 1960, Sicily, AKV 18 (ex-CVE 118 in 1961 and Gilbert Islands, AKV 39 (ex-CVE 107) and Salerno Bay AKV 10 (ex-CVE 110) on 1 June, 1961. Vella Gulf and Gilbert Islands, however, were reinstated on the Navy List on 1 Nov. 1961.

Disposals of "Anzio" Class

The sole survivor of the 50 former escort aircraft carriers of the "Anzio" class, Thetis Bay, LPH 6 (ex-CVHA 1, ex-CVE 90) converted into an Amphibious Assault Ship in 1955-56, was stricken from the Navy List on 1 Mar. 1964; but in Aug. 1965 approval was given for her loan to Spain for 5 years (rescinded a year later in favour of Cabot, see page 234, Spanish section). For disposals of the other ships of the "Anzio" class, see page 320, 1963-64 edition.



BADOENG STRAIT

Added 1957, United States Navy, Official

Ex-Aircraft Carriers-contd.

ARLINGTON (ex-Saipan)
WRIGHT

No. AGMR 2 (ex-CC 3, ex-AVT 6, ex-CVL 48) CC 2 (ex-AVT 7, ex-CVL 49)

Builders New York S.B. Corp. New York S.B. Corp.

Laid down 10 july 1944 21 Aug. 1944

Launched 8 luly 1945 1 Sep. 1945

Completed 14 July 1945 9 Feb. 1947 Converted 1963-1965 1962-1963

Major Communications Relay Ship

(AGMR) and Command Ship (CC)

Ex-Aircraft Transports (AVT), Former Aircraft Carriers (CVL)

14,500 tons standard (19,600 tons full load)

tons full load)
Length: 664 (pp.), 684½ (o.a.)
feet. Beam: 77½ feet (hull).
Width: 109 (extreme) feet.
Draught: 28 feet
8—40 mm. AA. in 4 twin mountings (as converted)
Helicopters
G.E. geared turbines. 4 shafts.
S.H.P.: 12,000=33 kts.
4 Babcock & Wilcox
3,371 tons
746 (ship's company): 1.720 as Dimensions:

Guns:

Aircraft:

Machinery:

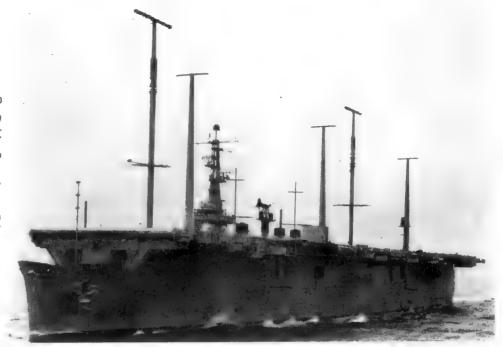
Boilers: Oil fuel:

Complement:

3,371 tons 746 (ship's company); 1,720 as command ship, including com-mands and staff (53 officers, 1,103 men)

Modifications of the "Baltimore" class heavy cruiser design laid down and built as aircraft carriers (CVLs). Originally carried over 50 aircraft. The hull below the main (hangar) deck duplicates that of the Camden-built heavy cruisers. Both ships had four funnels but had the fore funnel removed (see two photos of Saipan and another photo of Wright in the 1957-58 edition). As aircraft carriers the original war complement was 1,821 (243 officers and 1,578 men) but only 775 of 1,007 enlisted men were retained in Saipan as training carrier. Conversion Conversion

listed men were retained in Saipan as training carrier. Conversion
Wright was converted into a command ship at Puget Sound Naval Shipyard under the Fiscal Year 1962 Conversion Programme at a cost of \$25,000,000. She recommissioned on 11 May 1963. She has five glass masts 33 to 83 feet in height to support antennae. The tallest antennae is 114 feet from deck. Highest point above the waterline is 156 feet. She is the Navy's second fully equipped command post. The conversion of Saipan into a Command Ship was authorised in Fiscal Year 1963 Conversion Programme. The contract was awarded on 13 Feb. 1963 to Alabama Drydock and Shipbuilding Company, Mobile, Alabama, for the activation, repair and conversion of Saipan at a total fixed price of \$9,329,173. The ship's primary function after conversion was to serve as an operations communications headquarters ship with the fleet. Her conversion was halted in Feb. 1964. She resumed conversion as a Major Communications Relay Ship (AGMR), for which \$26,886,424 was authorised in Sep. 1964. She was reclassified as AGMR 2, and renamed Arlington in Apr. 1965, and scheduled to commission on 10 Dec. 1965.



WRIGHT

1964, United States Navy, Official

Operational

The mission of the command ship is to provide command and control facilities to top echelon commands and staffs. The ship will go to sea with the most extensive communications facilities ever put aboard ship. Its "voice of command" can be sent to any ship, aircraft or station anywhere in the world. The command spaces have facilities for theatre-type presentations similar to command posts ashore, including projection equipment and motion picture screens. An entire bulkhead is used to display large status boards and maps which are mounted on tracks and can be quickly rolled into view. The concentrated operations, plotting, chart and graphics, emergency action, briefing and conferences. On the ship's antennae deck are arranged the most powerful transmitting antennae ever installed in a naval vessel, More than 200 officers and men are assigned to operate and

maintain these antennae and their associated radio and communications equipment. An entire room is given over to the ship's teletype printers, each of which can record incoming messages at 100 words per minute. The ship is capable of handling as many messages in a day as a major shore-based communications station.

Reclassification
Both ships were reclassified from aircraft carriers
(CVL) to aircraft transports (AVT) on 15 May 1959.
Wright was reclassified from AVT 7 to CC 2 on 1 Sep.
1962 and Saipan from AVT 6 to CC3 on 1 Jan. 1964,
and to AGMR 2 on 3 Sep. 1964.

Drawling
Port elevation and plan of these ships as aircraft carriers appears in the 1963-64 and earlier editions.



WRIGHT

1964, United States Navy, Official



1966, Official (direct from U.S.S. Wright, courtesy Commanding Officer)

COMMAND SHIP (CC)

NORTHAMPTON

No. CC 1 (ex-CLC 1, ex-CA 125)

Builders Bethlehem Co., Quincy, Mass.

Laid down 31 Aug. 1944 Launched 27 Jan. 1951

Completed 7 Mar. 1953

Formerly rated as Tactical Command Ship (CLC) (Ex-Cruiser, Task Fleet Command Ship)

Heavy Cruiser Type

Displacement:

Dimensions:

Guns:

Aircraft: Armour: Machinery:

Boilers: Oil fuel: Complement:

14,700 tons standard (17,200 tons full load)
Length: 676 (o.a.) feet. Beam:
71 feet. Draught: 29 feet
4—5 inch, 54 cal, d.p. in single mountings (see Gunnery notes)
2 helicopters
6" side 3"+2" decks
G.E. geared turbines. 4 shafts.
S.H.P.: 120,000=33 kts.
4 Babcock & Wilcox
2,500 tons
Allowance: 62 officers, 1,175 men. Accommodation for 227 officers, 1,450 men.

General

ment, a vast communications network, an imposing array of electronic antennae, and featured one of the largest seaborne radar aerials in the world, but this was removed in 1963. She is one deck higher than a normal cruiser to provide for additional office space, and has the tallest unsupported mast afloat (125 feet). Seven months trials to Nov. 1954. First operational assignment was to Atlantic Fleet Amphibious Force as temporary flagship in Nov. 1954, Has served as Second Fleet flagship, based at Norfolk, Va. She was reclassified as Command Ship (CC) on 15 Apr. 1961, and was relieved as 2nd Fleet Flagship in Oct. 1961. Günery

The main armament comprises four 5 inch dual purpose guns disposed in single mountings two forward and two aft. They have a rate of fire of 54

rounds per minute. The secondary armament comprised eight 3 inch, 70 cal. anti-aircraft weapons, also of a new pattern, disposed in twin turrets, two on each side amidships abreast the funnel, but these were removed in 1962 as they presented a major maintenance problem.

Photographs

A stationard how oblique agrie!

Photographs
A starboard bow oblique aerial view appears in the 1957-58 edition, a starboard broadside silhouette view in the 1958-59 and 1959-60 editions, a large starboard oblique view in the 1957-58 to 1963-65 editions, and a starboard bow oblique aerial view in the 1963-64 edition.

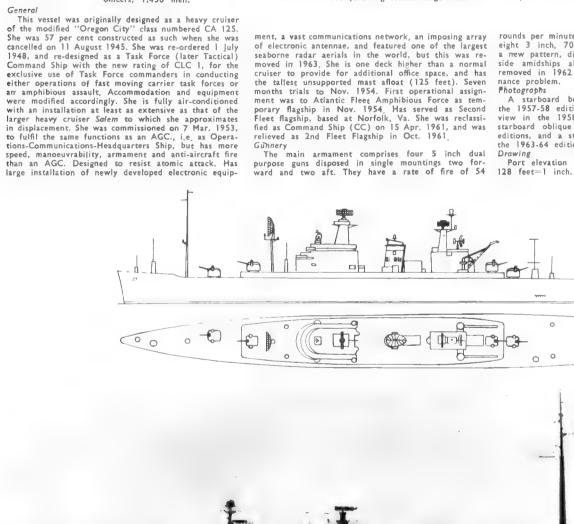
Drawing
Port elevation and plan, Redrawn in 1965. Scale:

128 feet=1 inch.



NORTHAMPTON (showing former large radar scanner atop the foremast)

1959. Ted Stone



NORTHAMPTON (radar on foremast now replaced by a bigger scanner)

ALEXANDER HAMILTON ANDREW JACKSON BENJAMIN FRANKLIN CASIMIR PULASKI DANIEL BOONE DANIEL WEBSTER FRANCIS SCOTT KEY GEORGE BANCROFT GEORGE WASHINGTON CARVED	No	· .
ALEXANDER HAMILTON	SSBN	617
ANDREW JACKSON	SSBN	619
BENJAMIN FRANKLIN	SSBN	640
CASIMIR PULASKI	SSBN	633
DANIEL BOONE	SSBN	624
DANIEL WEBSTER	SSBN	626
FRANCIS SCOTT KEY	SSBN	657
GEORGE BANCROFT	SSBN	643
GEORGE C. MARSHALL	SSBN	654
GEORGE WASHINGTON CARVER	SSBN	656
HENRY CLAY	SSBN	625
HENRY L. STIMSON	SSBN	655
JAMES K. POLK	SSBN	645
JAMES MADISON	SSBN	627
JAMES MONROE	SSBN	622
JOHN ADAMS	SSBN	620
JOHN C. CALHOUN	SSBN	630
KAMEHAMEHA	SSBN	642
LAFAYETTE	SSBN	616
LEWIS AND CLARK	SSBN	644
MARIANO G. VALLEJO	SSBN	658
NATHAN HALE	SSBN	623
NATHANAEL GREENE	SSBN	636
SAM RAYBURN	SSBN	635
SIMON BOLIVAR	SSBN	641
STONEWALL JACKSON	SSBN	634
GEORGE WASHINGTON CARVER HENRY CLAY HENRY L. STIMSON JAMES K. POLK JAMES MADISON JAMES MONROE JOHN ADAMS JOHN C. CALHOUN KAMEHAMEHA LAFAYETTE LEWIS AND CLARK MARIANO G. VALLEJO NATHAN HALE NATHANAEL GREENE SAM RAYBURN SIMON BOLIVAR STONEWALL JACKSON TECUMSEH ULYSSES S. GRANT VON STEUBEN WILL ROGERS WOODROW WILSON	22BM	628
ULYSSES S. GRANT	22BM	631
VON STEUBEN	22BN	632
WILL ROGERS	22BM	659
WOODROW WILSON	22RM	624

CHOMADINEC

SUBMARINES	5		
Builders	Laid down	Launched	Commissioned
General Dynamics/Electric Boat	26 June 1961	18 Aug. 1962	27 June 1963
Mare Island Naval Shipyard	26 Apr. 1961	15 Sep. 1962	3 Juy 1963
General Dynamics/Electric Boat	25 May 1963	5 Dec. 1964	22 Oct. 1965
General Dynamics/Electric Boat	12 Jan. 1963	1 Feb. 1964	14 Aug. 1964
Mare Island Naval Shipyard		22 June 1962	23 Apr. 1964
General Dynamics/Electric Boat	28 Dec. 1961	27 Apr. 1963	9 Apr. 1964
General Dynamics/Electric Boat	5 Dec. 1964	23 Apr. 1966	31 Dec. 1966
General Dynamics/Electric Boat	24 Aug. 1963	20 Mar. 1965	22 Jan. 1965
Newport News S.B. & D.D. Co.	2 Mar. 1964	21 May 1965	29 Apr. 1966
Newport News S.B. & D.D. Co.	24 Aug. 1964	14 Aug. 1965	15 June 1966
Newport News S.B. & D.D. Co.	23 Oct. 1961	30 Nov. 1962	20 Feb. 1964
General Dynamics/Electric Boat	4 Apr. 1964	13 Nov. 1965	20 Aug. 1966
General Dynamics/Electric Boat	23 Nov. 1963	22 May 1965	16 Apr. 1966
Newport News S.B. & D.D. Co.	5 Mar. 1962	15 Mar. 1963	28 July 1964
Newport News S.B. & D.D. Co.	31 July 1961	4 Aug. 1962	7 Dec. 1963
Portsmouth Naval Shipyard	19 May 1961	12 Jan. 1963	12 May 1964
Newport News S.B. & D.D. Co.	4 June 1962	22 June 1963	15 Sep. 1964
Mare Island Naval Shipyard	2 May 1963	16 Jan. 1965	10 Dec. 1965
General Dynamics/Electric Boat	17 Jan. 1961	8 May 1962	23 Apr. 1963
Newport News S.B. & D.D. Co.	29 July 1963	21 Nov. 1964	22 Dec 1965
Mare Island Naval Shipyard	7 July 1964	23 Oct. 1965	Sep. 1966
General Dynamics/Electric Boat	2 Oct. 1961	12 Jan. 1963	23 Nov. 1963
Portsmouth Naval Shipyard	21 May 1962	12 May 1964	19 Dec. 1964
Newport News S.B. & D.D. Co.	3 Dec. 1962	20 Dec. 1963	2 Dec. 1964
Newport News S.B. & D.D. Co.	17 Apr. 1963	22 Aug. 1964	29 Oct. 1965
Mare Island Naval Shipyard	4 July 1962	30 Nov 1963	26 Aug. 1964
General Dynamics/Electric Boat	1 June 1962	22 June 1963	29 May 1964
General Dynamics/Electric Boat	18 Aug. 1962	2 Nov. 1963	17 July 1964
Newport News S.B. & D.D. Co.	4 Sep. 1962	18 Oct. 1963	30 Sep. 1964
General Dynamics/Electric Boat	20 Mar. 1965	7 July 1966	Mar. 1967
Mare Island Naval Shipyard	13 Sep. 1961	22 Feb. 1963	27 Dec. 1963

Nuclear Powered Fleet Ballistic Missile Submarines (SSBN)

31 "Lafayette" Class

Displacement:

Dimensions: Ballistic weapons:

Torpedo tubes: Machinery:

7,250 tons standard (8,250 tons submerged)
Length: 425 feet, Beam: 33 feet
Draught: 33 feet
16 tubes amidships for A—3
model "Polaris" missiles with
a range of 2,500 nautical miles
(see Missile Lounching)
4—21 inch forward
1 pressurised water cooled nuclear reactor. Geared turbines.
1 shaft S.H.P.: 15,000=20 kts.
surface, 35 kts. submerged
140 (14 officers, 126 men)

Complement:

General
These latest "Polaris" missile submarines are the largest undersea craft ever built. The light surface displacement is 6.650 tons. Lafayette, named after the French aristocrat who served with Washington in the American Revolution, was the prototype and lead ship: Construction plans and design were awarded to the Electric Boat Division, Groton, Connecticut, on 24 Mar. 1960.

The first four were authorised under the 1960 New

Mar. 1960.

The first four were authorised under the 1960 New Construction Programme, five more under the 1961 programme and ten under the 1962 programme. Cost \$109,500,000 each.

SSBN 640-645 were authorised in the Fiscal Year 1963 New Construction Pprogramme. Advanced nuclear powered fleet ballistic missile submarines capable of firing the A-3 model "Polaris" missile while surfaced or submerged.

These six 1963 Programme units. together with six more in the 1964 Programme, will bring the number of Polaris armed submarines up to the total 41 planned.

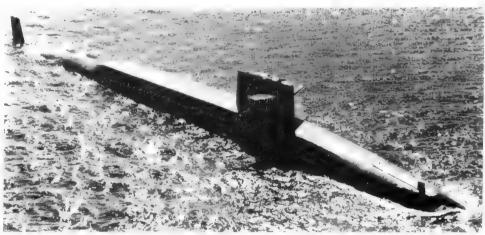
Missile Launching

Missile Launching
The first eight of this class are fitted with A-2 missiles with 1,500 nautical miles range.
The "Polaris" missiles are launched from 16 vertical launchers within the submarine's hull, by compressed air, except the six units provided for under the Fiscal Year 1964 Programme, which will have steam launchers for the "Polaris" missiles. Missiles ejected by compressed air in all SSBNs prior to Nathan Hale and all subsequent. Small solid rocket motor burns and pours its extremely hot gases into a water-filled chamber where steam is produced instantaneously, which ejects missile, Andrew Jackson launched the first A-3 Polaris missile from a submarine on 26 Oct. 1963 off Cape Canaveral (Kennedy). Fla, Missile fired by compressed air. 15 tons, 2,500 nautical miles.



ANDREW JACKSON

1965, United States Navy, Official



ALEXANDER HAMILTON

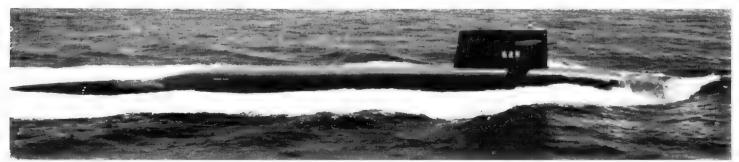
1963, United States Navy, Official

Engineering SSBN 640 et seq: were re-engineered. SSBN 654 et seq: were re-engineered, but are of SSBN 616 class.

Diving Daniel Webster had diving planes on bow instead of sail, the only one of the class to fitted.

Photographs

A larger photograph of Lafayette appears in the 1963-64 edition, an oblique aerial view of Lafayette in the 1963-64 and 1964-65 editions, and a photograph of Henry Clay launching a Polaris missile in the Frontispiece of the 1964-65 edition.



HENRY CLAY

1964, United States Navy, Official

Submarines—contd.

ETHAN ALLEN JOHN MARSHALL SAM HOUSTON THOMAS A. EDISON THOMAS JEFFERSON	No. SSBN 608 SSBN 611 SSBN 609 SSBN 610 SSBN 618	Builders Electric Boat, General Dynamics Newport News S.B. & D.D. Co. Newport News S.B. & D.D. Co. Electric Boat, General Dynamics Newport News S.B. & D.D. Co.	Laid down 14 Sep. 1959 4 Apr. 1960 28 Dec. 1959 15 Mar. 1960 3 Feb. 1961	Launched 22 Nov. 1960 15 July 1961 2 Feb. 1961 15 June 1961 24 Feb. 1962	Completed 8 Aug. 1961 21 May 1962 6 Mar. 1962 10 Mar. 1963 4 Jan. 1963
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Nuclear Powered Fleet Ballistic Missile Submarines (SSBN)

5 "Ethan Allen" Class

Displacement: Dimensions:

Ballistic weapons:

Torpedo tubes:

6,900 tons standard (8,000 tons submerged)
Length: 410 feet. Beam: 34 feet. Draught: 30½ feet
16 tubes amidships for A-2 model "Polaris" missiles with a range of 1,500 nautical miles 4—21 inch forward
1 Westinghouse pressurised water cooled nuclear reactor. Geared turbines. I shaft. S.H.P.: 15,000=20 kts. (surface), 35 kts. (submerged)
112 (12 officers, 100 men)
Two seperate crews for each Machinery:

Complement: Two seperate crews for each submarine, which relieve each other at approximately three-month intervals.

General

General

Ethan Allen was the lead ship in a new class of fleet ballistic missile submarines, larger than the "George Washington" class, with a new hull design. She cost \$105,000,000. The class is of a larger and much improved type over the first group of SSBNs. One big difference is that the hull was specially designed to accommodate the missiles, whereas the hulls of the first five SSBNs were adapted from existing hull designs.

Construction

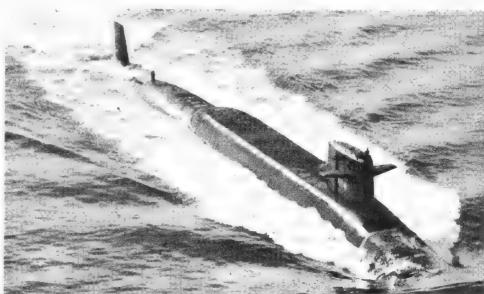
The contracts for Sam Houston, Thomas A. Edison and John Marshall, were awarded on 1 July 1959. The completion dates given in the table above are commissioning dates.

Engineering
General Electric turbines in Ethan Allen and Thomas
A. Edison, Westinghouse in others.

Photographs
A larger photograph of Ethan Allen showing sonar dome forward appears in the 1963-64 edition, and a large oblique aeral view of Thomas A. Edison in the 1962-63 to 1964-65 editions.

A port bow surface view of Ethan Allen appears in the 1962-63 to 1965-66 editions.
A starboard bow oblique aerial view of Sam Houston appears in the 1962-63 to 1965-66 editions.

A large port bow oblique aerial view of John Marshall appears in the 1964-65 and 1965-66 editions.



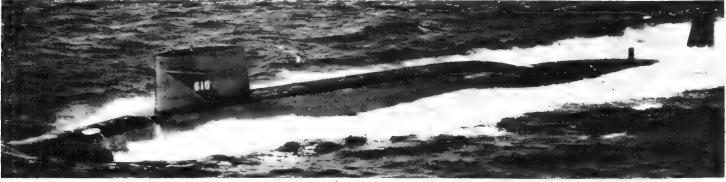
ETHAN ALLEN

1966, General Dynamics/Electronic Boat



JOHN MARSHALL

1966



THOMAS A. EDISON

1966, General Dynamics / Ejectric Boat



THOMAS JEFFERSON

1965, United States Navy, Official

ABRAHAM LINCOLN GEORGE WASHINGTON PATRICK HENRY ROBERT E. LEE THEODORE ROOSEVELT SSBN 602 SSBN 598 SSBN 599

Nuclear Powered Fleet Ballistic Missile Submarines (SSBN)

5 "George Washington" Class

Displacement:

Dimensions:

Ballistic missiles:

5,600 tons standard (6,700 tons submerged)
Length: 382 feet. Beam: 33 feet.
Draught: 29 feet
16 tubes amidships for A-I model "Polaris" missiles (28 feet long, 50 ins. diam., 15 tons weight, with nuclear warheads, and a rarge of 1,200 nautical miles), capable of being launched while surfaced or submerged, (see Missiles)
6—21 inch forward
1 pressurised water-cooled nuclear reactor. Geared turbine.
1 shaft. S.H.P.: 15.000=20 kts. surface, 35 kts. submerged
112 (12 officers, 100 men). (Two complete crews designated "Blue" and "Gold" relieving each other about every three months)

Tubes:

Machinery:

Complement:

months)

General

The first 1957-58 Supplemental New Construction Programme signed on 11 Feb. 1958 provided \$296,000,000 for the construction of three nuclear powered submarines armed with "Polaris" ballistic missiles. They had the "Albacore" type hull, giving them high underwater speed, and were equipped with "SINS", the new navigational system, and new stabilising and electronics apparatus incorporating the most recent engineering advances. They were designed specifically for launching "Polaris" missiles, fired submerged, vertically from within the submarine, and "Subroc" anti-ship missiles fired through torpedo tubes. They differ from nuclear powered submarines of subsequent construction chiefly in their missile features. Ordered on 14 Feb, 1958, This class have an auxiliary diesel engine and batteries, both of which can be used for emergency propulsion.

In July 1958 contracts were awarded for two more nuclear powered submarines for carrying "Polaris" missiles, under the Second 1957-58 Supplemental New Construction programme, With whale-shaped hulls, they are of modified "Skipjack" design with a 128 ft, missile launching section inserted.

Missiles George Washington successfully fired the solid-fuelled "Polaris" missile for the first time from a submarine from a submerged position on 20 July 1960. The sixteen launching tubes are arranged in double vertical rows along the after deck abaft the "sail" (conning tower fin). The gyrostabiliser has an 8 ft. diameter wheel with a weight of 22 tons and a total weight of 50 tons. All sixteen missiles can be fitted in fifteen minutes. George Washington was converted to launch A-3 model "Polaris" missiles with a range of 2,500 nautical miles during an eighteen-months overhaul from June 1964 to Dec. 1965 at Groton, Conn. She also underwent nuclear reactor core replacement, her first "refueling" after steaming over 100,000 miles. All this class will convert to the A-3 "Polaris" installation.

Photographs

Photographs

A large starboard broadside surface view of George
Washington and a port quarter oblique aerial view
of Patrick Henry appear in the 1960-61 and 1961-62
editions, and a port bow oblique aerial view of
Patrick Henry in the 1960-61 to 1962-63 editions.

A port bow surface view of George Washington
appears in the 1960-61 to 1965-66 editions.

Nomenclature

All nuclear powered fleet ballistic missile submarines armed with "Polaris" weapons are named after men famous in United States history.

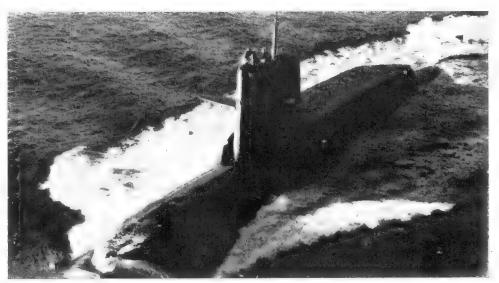
Submarines—contd.

Builders	Laid down	Launched	Completed
Portsmouth Naval Shipyard	1 Nov. 1958	14 May 1960	31 Jan. 1961
Electric Boat, General Dynamics	1 Nov. 1957	9 June 1959	15 Nov. 1959
Electric Boat, General Dynamics	27 May 1958	22 Sep. 1959	7 Mar. 1960
Newport News S.B. & D.D. Co.	25 Aug. 1958	18 Dec. 1959	31 Sep. 1960
Mare Island Naval Shipyard	20 May 1958	3 Oct. 1959	12 Dec. 1960



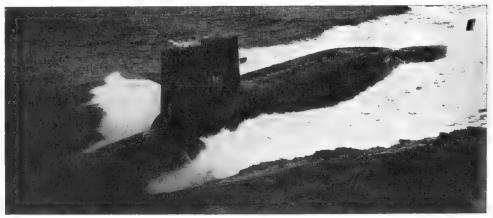
PATRICK HENRY

General Dynamics/Electric Boat



THEODORE ROOSEVELT

1963, United States Navy, Official



ROBERT F. LEF

1961, United States Navy, Official



ABRAHAM LINCOLN

1961. United States Navy, Official

-				
Su	bmaı	rines	-col	ntd.

	No.	Builders	Laid down	Launched	Completed
ASPRO	SSN 648	Ingalls Shipbuilding Corpn., Pascagoula, Miss	23 Nov. 1964	-	_
BARB	SSN 596	Ingalls Shipbuilding Corpn., Pascagoula, Miss	9 Nov. 1959	12 Feb. 1962	17 Aug. 1963
BERGALL	SSN 667	Electric Boat Div., General Dynamics Corpn.	16 Apr. 1966	_	_
DACE	SSN 607	Ingalls Shipbuilding Corpn., Pascagoula, Miss	6 June 1960	18 Aug. 1962	4 Apr. 1964
FLASHER	SSN 613	Electric Boat Div., General Dynamics Corpn.	14 Apr. 1961	22 June 1963	14 May 1966
GATO	SSN 615	Electric Boat Div., General Dynamics Corpn.	15 Dec. 1961	14 May 1964	Nov. 1966
GRAYLING	SSN 646	Portsmouth Naval Shipyard, New Hampshire.	12 May 1964	17 Sep. 1966	_
GREENLING	SSN 614	Electric Boat Div., General Dynamics Corpn.	15 Aug. 1964	4 Apr. 1964	Sep. 1966
GUARDFISH	SSN 612	New York Shipbuilding Corpn., Camden, N.J.	28 Feb. 1961	15 May 1965	Aug. 1966
GUITARRO	SSN 665	Mare Island Naval Shipyard, California	9 Dec. 1965		
GURNARD	SSN 662	Mare Island Naval Shipyard, California	22 Dec. 1964	10 Dec. 1966	-
HADDO	SSN 604	New York Shipbuilding Corpn., Camden, N.J.	9 Sep. 1960	18 Aug. 1962	16 Dec. 1964
HADDOCK	SSN 621	Ingalls Shipbuilding Corpn., Pascagoula, Miss	24 Apr. 1961	21 May 1966	Apr. 1967
HAMMERHEAD	SSN 663	Newport News S.B. & D.D. Co.	29 Nov. 1965		
HAWKBILL	SSN 666	Mare Island Naval Shipyard, California	9 June 1966	_	
JACK	SSN 605	Portsmouth Naval Shippard, New Hampshire,	16 Sep. 1960	24 Apr. 1963	28 May 1966
LAPON	SSN 661	Newport News S.B. & D.D. Co.	26 July 1966	_	
NARWHAL	SSN 671	Electric Boat Div., General Dynamics Corpn.	17 Jan. 1966	_	_
PARGO	SSN 650	Electric Boat Div., General Dynamics Corpn.	3 June 1964	17 Sep. 1966	
PERMIT	SSN 594	Mare Island Naval Shipyard, California	16 July 1959	1 July 1961	6 June 1962
PLUNGER	SSN 595	Mare Island Naval Shipyard, California	2 Mar. 1960	9 Dec. 1961	21 Nov. 1962
POGY	SSN 647	New York Shipbuilding Corpn., Camden, N.J.	5 May 1964	26 Nov. 1966	-
POLLACK	SSN 603	New York Shipbuilding Corpn., Camden, N.J.	14 Mar. 1960	17 Mar. 1962	26 May 1964
PUFFER	SSN 652	Ingalls Shipbuilding Corpn., Pascagoula, Miss	8 Feb. 1965	_	
QUEENFISH	SSN 651	Newport News S.B. & D.D. Co.	11 May 1964	25 Feb. 1966	_
RAY	SSN 653	Newport News S.B. & D.D. Co.	4 Jan. 1965	21 June 1966	
SAND LANCE	SSN 660	Portsmouth Naval Shipyard, New Hampshire.	15 Jan. 1965		_
SEA DEVIL	SSN 664	Mare Island Naval Shipyard, California	12 Apr. 1966	_	_
STURGEON	SSN 637	Electric Boat Div., General Dynamics Corpn.	10 Aug. 1963	26 Feb. 1966	Oct. 1966
SUNFISH	SSN 649	*General Dynamics Corp., Quincy, Mass.	15 Jan. 1965	17 Sep. 1966	_
TAUTOG	SSN 639	Ingalls Shipbuilding Corpn., Pascagoula, Miss.	27 Jan. 1964	10 Dec. 1966	
TINOSA	SSN 606	Portsmouth Naval Shipyard, New Hampshire.	24 Nov. 1959	9 Dec. 1961	17 Oct. 1964
WHALE	SSN 638	*General Dynamics Corp., Quincy, Mass.	27 May 1964	4 June 1966	Feb. 1967
	SSN 668	New York Shipbuilding Corpn., Camden, N.J.			_
	SSN 669	Electric Boat Div., General Dynamics Corpn.		_	
	SSN 670	New York Shipbuilding Corpn., Camden, N.J.			
	SSN 672	Mare Island Naval Shipyard, California	_	<u> </u>	

Nuclear Powered Attack Submarines (SSN)

30 + 17 "Thresher" Group

Displacement: Dimensions: Tubes: A/S weapons: Machinery: 3,750 tons standard (4,300 tons submerged) see Class Variations Length: 278½ feet. Beam; 31½ feet. Draught; 25½ feet 4—21 inch amidships

Radius:

Complement:

feet. Draught: 25 feet
4—21 inch amidships
SUBROC (see A/S Warfare)
1 pressurised water cooled nuclear reactor. Geared turbines. 1
shaft. S.H.P.: 15,000=20 kts.
(surface), 35 kts. (submerged)
60,000 miles without refueling
99 (12 officers, 87 men)

General

Of improved design with "tear-drop" hull. Diving planes attached to the "sail" or conning tower fin, instead of the bow, to improve manoeuvrability. Torpedo tubes set in both sides amidships instead of in the bow. Capable of diving deeper and running more quietly at high speeds than other submarines, Diving and steering operations controlled automatically by push buttons. Long range sonar. Cost \$49,000,000 to \$57,000,000 each. €ach

*Sunfish and Whale were taken over by General Dynamics Corporation which acquired Bethlehem Quincy Yard in 1964.

Shipbuilding Programme Year
1958: Barb, Permit, Plunger. 1959: Dace, Haddo,
Jack, Pollack, Tinosa, 1960: Flasher, Gato, Greenling,
Guardfish. 1961: Haddock, 1962: Sturgeon, Tautog,
Whale. 1963: Aspro, Grayling, Pargo, Pogy, Puffer,
Queenfish, Ray, Sunfish. Six more in the 1964 programme, six in 1965, six in 1966, five in 1967.

gramme, six in 1965, six in 1966, five in 1967.

Class Variations

The above particulars refer to the original "Thresher" class: Barb, Dace, Guardfish, Haddo, Haddock, Permit, Plunger, Pollack and Tinosa). Jack is 295½ feet long with a submerged displacement of 4,500 tons.

The "Sturgeon" sub-class is of modified "Thresher" type with improved sonar and torpedo fire control features. 310 tons heavier and 13½ feet longer (Aspro, Grayling, Pargo, Pogy, Puffer, Queenfish, Ray, Sturgeon, Sunfish, Tautog, Whale.

SSN 660-671 are of "Sturgeon" class, 292 (o.a.)×31 feet, 4,100 tons full load. Flasher, Gato and Greenling were lengthened by 13½ feet to 292½ feet while under construction due to heavier propulsion plants and heavier bridge structures. Narwhal, first of new subclass, is of modified ASW design.



PLUNGER

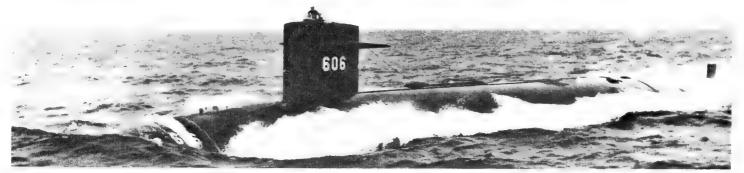
Nomenclature

The name of SSN 596 was changed from Plunger to Pollack on 28 Apr. 1959 and to Barb on 23 July 1959, when the name of SSN 603 was changed from Barb to Pollack

Anti-Submarine Warfare
The SUBROC anti-submarine missile is fired from a conventional 21-inch torpedo tube, after which it streaks for the surface, leaves the water in a ballistic trajectory and re-enters miles from the launching submarine. Back in the water, SUBROC becomes a submarine hunting torpedo, Either a high explosive or nuclear warhead can be fitted.

1963, United States Navy, Official

Engineering
Jack is fitted with two propellers on one shaft, rotating in opposite direction, with one shaft within a larger sleeve-like shaft. Also fitted with a new design counter-rotating turbine without a reduction gear. Both innovations were designed to reduce operating noises. To accommodate the larger turbine the engine spaces are lengthened by ten feet and the shaft structure is seven feet longer to make room for the second propeller. The propellers are of different size and smaller than in other "Thresher" class submarines. There is a ten per cent increase in power efficiency, but no increase in speed over her sister ships.



Submarines-contd.

TRITON

No. SSN (ex-SSRN) 586

Builders Electric Boat Division, General Dynamics Corporation, Groton,

Laid down 21 May 1956

Launched 19 Aug. 1958

Completed 10 Nov. 1959

Nuclear Powered Attack Submarine (SSN)

(Ex-Radar Picket Submarine SSRN)

I Cruiser Type

Displacement:

5,900 tons standard (7,750 tons

Dimensions:

submerged)
Length: 447½ feet. Beam: 37
feet. Draught: 24 feet
6-21 inch (4 forward, 2 aft)

Tubes: Machinery:

2 G.E. pressurised water-cooled S3G nuclear reactors. 2 G.E. geared turbines. 2 shafts. S.H.P.:

Radius: Complement: 34.000=27 kts. surface, 30 kts. submerged 110.000 miles without refuelling 170 (14 officers and 156 men)

General

General

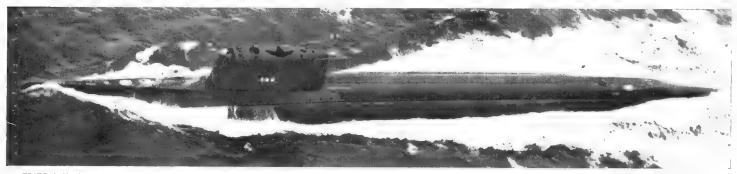
The world's largest and most powerfully engined submarine. Provided under the 1956 Naval Appropriations. Originally designed to serve as an early warning station for task forces and to keep up with the fastest aircraft carriers and destroyers. The first nuclear powered radar picket submarine, the largest submarine ever built, and the first to be powered with two nuclear reactors. Her design emphasised fast surface speed so that she could better accomplish her specialised duties. She has three

deck levels within her hull. Cost \$100,000.000. She circumnavigated the globe submerged in 1960 for 83 days and 41,500 miles at an average speed of 18 kts. She refuelled in mid-1962 after steaming 110,000 miles.

Photographs

A large port broadside surface view, a starboard bow oblique aerial view, and a starboard bow surface view appear in the 1960-61 and 1961-62 editions.

Reclassification
Triton was reclassified from SSRN to SSN in Mar.
1961.



TRITON (looking down into the "sail")

Added 1961, courtesy General Electric Company, Schenectady (Engineers)

N	o.
SSN	585
SSN	588
SSN	589
SSN	590
SSN	591
SSN	592
	85 N 85 N 85 N 85 N 85 N 85 N 85 N

Builders Builders Electric Boat, General Dynamics Mare Island Naval Shipyard Electric Boat, General Dynamics Ingalls Shipbuilding Corporation Newport News S.B. & D.D. Co & D.D. Co.

29 May 23 Jan. 20 Aug. 3 Feb. 1959 3 Feb. 24 Feb. 1958

Completed Launched 8 Mar. 1959 10 Apr. 1961 27 June 1960 28 Mar. 1961 9 Feb. 1961 26 May 8 Oct. 19 Dec. 1958 1960 31 Mar. 1960 Mar. 1960

Nuclear Powered Attack Submarines (SSN)

6 "Skipjack" Class

Displacement:

2,830 tons surface (3,500 tons submerged) 252×32×28 feet

Dimensions:

Machinery:

252×32×28 feet 6 bow (24 torpedoes carried) Westinghouse pressurised water-cooled nuclear reactor. Westinghouse geared turbines in Sklp-jack, G.E. in others. 1 shaft. S.H.P.: 15,000=16 kts. surface, 35 kts. submerged 60,000 miles without refueling 90 (8 officers, 82 men)

Radius: Complement:

General

General
Skipjack, the prototype of the class, was built under the Fiscal Year 1956 programme and the other five under the 1957 programme. They have the "Albacore" type streamline hull configuration based on the shape of a whale, a "tear-drop nose", and single screw propulsion. They incorporate several novel features, including hydro-wings or diving planes fitted to the "fin" or "sail", as the coming tower is now called, instead of being encumbered by bow hydroplanes. Maximum depth over 400 feet. Cost \$40,000,000 each, Scorpion set endurance record for sealed atmosphere for 70 consecutive days in 1962.

Engineering
The five-bladed propeller provides maximum speed
and manoeuvrability. There are auxiliary diesels for
emergency propulsion.



SKIPJACK

1959, United States Navy, Official



Nuclear Powered Attack Submarines (SSN)

4 "Skate" Class

Displacement:

Dimensions: Tubes: Machinery:

"Skate" Class
2,360 torus standurd (2,861 tons submerged)
267\frac{2}{2} (o.a.)\times 25\times 21\frac{1}{2} feet
6-21 inch (2 stern)
Westinghouse water-cooled nuclear reactor and geared turbines. 2 shafts. S.H.P.: 6,600
=15 kts. (surface), 25 kts. (submerged),
95 (8 officers, 87 men)

Complement:

General

General Skete was provided under the 1954 F.Y. programme, Skete was provided under the 1955, Sargo and Seadragon under 1956. All have stern diving planes, twin screws and a hull configuration similar to that of Nauxilus and Seawolf. On 9 Aug. 1958 Skate completed the second submerged crossing of the North Pole after having held the (then) record of 32 days submerged; and she completed a 12-day sub-Polar cruise, surfacing on 17 Mar. 1959 at the North Pole. She steamed a record of 120,862 miles on her first core and was refueled for the first time after 39 months service in May 1961. She is to undergo 1 year overhaul at Norfolk Naval Shipyard in 1965 to replace radioactive core and make noise reduction alternations. Seadragon

Submarines—contd.

	No.	Builders	Laid down	Launched	Combleted
SARGO	SSN 583	Mare Island Naval Shipyard	21 Feb. 1956	10 Oct. 1957	1 Oct, 1958
SEADRAGON	SSN 584	Portsmouth Naval Shipyard	20 June 1956	16 Aug. 1958	5 Dec. 1959
SKATE	SSN 578	Electric Boat, General Dynamics	21 July 1955	16 May 1957	31 Jan. 1958
SWORDFISH	SSN 579	Portsmouth Naval Shipyard	25 Jan. 1956	27 Aug. 1957	1 Oct. 1958
SWORDFISH	SSN 579	Portsmouth Naval Shipyard	25 Jan. 1956	27 Aug. 1957	1 Oct. 195



SWORDFISH

transited Northwest Passage east to west 15—21 Aug. 1960 (Atlantic to Arctic Ocean). Skate commissioned on 23 Dec. 1957, Swordfish on 15 Sep. 1958, and Sargo on 10 Oct. 1958, Swordfish refueled in Sargo on 10 Oct. 1958. Swordfish refueled 1962 after cruising 112,000 miles since 19

Photographs
A port oblique aerial view of Skate appears in the 1958-59 to 1961-62 editions. Photographs of Sargo and Swordfish appear in the 1959-60 to 1962-63 editions, and of Sea Dragon in the 1962-63 to 1965-66 editions.



SKATE (first production mode) nuclear powered submarine)

1963, Electric Boat Division, General Dynamics Corporation

Nuclear Powered

Hunter-Killer Submarine (SSN) I "Tullibee" Class

SSN 597 TULLIBEE

Displacement:

2,175 tons standard (2,600 tons

Dimensions:

2,175 tons some submerged)
261×29×20 feet
4—21 inch amidships
Combustion engineering watercooled SIC nuclear reactor. Westinghouse turbine. Turbo-electric
-haft. S.H.P.: 2,500—
inches. (sub-Tubes: Machinery: inghouse turbine. Turbo-electric drive. I shaft. S.H.P.: 2,500—13 kts. (surface), 15 kts. (sub-

merged)
56 (6 officers, 50 men) Complement:

General

General
Built under the 1958 programme by Electric Boat
Division, General Dynamics Corporation. Designed as
an anti-submarine submarine. Speed secondary to manoeuvrability. "Albacore" type hull. Laid down on 26
May 1958, launched on 27 Apr. 1960 and commission

May 1958, launched on 27 Apr. 1960 and commissioned on 9 Nov. 1960.

Sonor

Equipped with the latest scientific sonar tracking apparatus, and unique sound-proofing. The placing of the torpedo tubes amidships allows for an unprecedented number of sonar tracking transducers and hydrophones in the bow area which provide "ears" for detecting enemy submarines.

Photographs
A large starboard broadside view of Tullibee appears in the 1961-62 edition.

TULLIBEE

Design

Her design is based on the shape of a whale, with a bow configuration of ""tear-drop" form, and her diving planes project from the "sail" (fin-shaped conning

1962, courtesy Mr. W. H. Davis

Engineering
Prototype reactor built by Reactor Division of Combustion Engineering, Windsor, Connecticut. The machinery comprises turbo-electric drive instead of reduction gears as in other nuclear powered submarines.

Nuclear Powered Submarine (SSN) (Ex-Guided Missile Submarine, SSGN) I "Halibut" Class

SSN 587 HALIBUT

3,650 tons standard (5,000 tons Displacement:

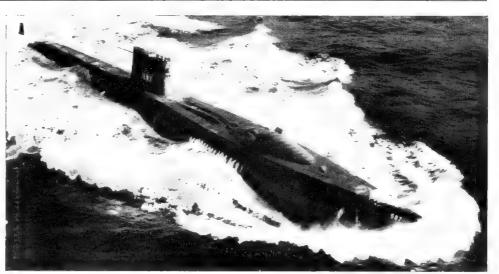
Dimensions:

Tubes: Machinery:

3,650 tons standard (5,000 tons (submerged) 350×294×21½ feet 4—21 inch Westinghouse water-cooled nuclear reactor. 2 Westinghouse geared turbines. 2 shafts. S.H.P.: 6.600=18 kts. (surface), 25 kts. (submerged) 97 (9 officers, 88 men)

Complement:

General
Provided under the 1956 programme. Originally designed as diesel powered but announced on 27 Feb. 1956 she would be nuclear powered. She was fitted to handle 5 "Regulus !" sub-sonic cruise, 560 miles range missiles. The U.S. Navy's first guided missile, nuclear powered submarine and the first ever designed from the keel up as a guided missile carrier. Her hull was designed primarily to provide a stable launching platform, rather than for speed or manoeuvrability, Built by Mare Island Naval Shipyard Laid down on 11 Apr. 1957, launched on 9 Jan. 1959, and commissioned on 4 Jan. 1960. Coast \$45,000,000.
Reclassified as SSN in 1965 without conversion. Guided missile equipment removed.



HALIBUT (first guided missile nuclear-powered submarine)

1960, United States Navy, Official

No. SSN 571 SSN 575 NAUTILUS

Submarines—contd. Electric Boat Division, General Dynamics Corporation Electric Boat Division, General Dynamics Corporation

Laid down 14 June 1952 15 Sep. 1953

Launched 21 Jan. 1954 21 July 1955

Combleted 22 Apr. 1955 30 Mar. 1957

Prototype Nuclear Powered Submarines (SSN)

2 Experimental Types

SSN 575 SEAWOLF

3,260 tons standard (4,110 tons Displacement:

submerged)
338 (o.a.)×29×22 feet
6-21 inch
Water-cooled nuclear reactor (see Dimensions:

Tubes: Machinery:

Engineering). G.E. geared turbines. S.H.P.: 15,000=19 kts. (surface) 22 kts. (submerged) 70,000 m'les cruising

Range: Complement:

105 (10 officers, 95 men)

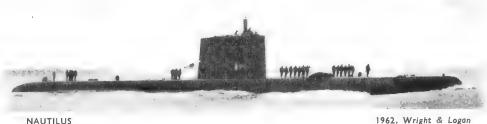
General

Seawolf was ordered on 19 July 1952. First trials were carried out on 21 Jan. 1957.

were carried out on 21 Jan. 1957.

Engineering
The original G.E. sodium cooled intermediate reactors were replaced by Westinghouse water-cooled reactors similar to those installed in Nautilus, She steamed 71,609 miles in 23 months on her first, sodium-cooled, core. She underwent her reactor conversion at the Electric Boat Division General Dynamics Corporation, Groton. Connecticut, at a cost of \$20,000,000. Conversion work started on 13 Dec. 1958, lasting 13 months, and she recommissioned on 30 Sep. 1960. Endurance

Endurance
Nautilus made the first submerged crossing of the
North Pole on 3 Aug. 1958. Seawolf made the record
when she remained submerged for 60 days in the Atlantic from 6 Aug. to 6 Oct. 1958, cruising 15,700 miles.



NAUTILUS

SSN 571 NAUTILUS

Machinery:

Displacement:

Dimensions:

submerged)
319‡ (o.a.)×28×25½ feet
6—21 inch

6—21 inch
Westinghouse pressurised watercooled reactor and geared turbines. 2 shafts. S.H.P.: 15,000
=20 kts, surface, 23 kts, submerged
40,000 miles
104 (10 officers, 94 men)

3.180 tons standard (3,747 tons

Range:

Range: 40,000 miles
Complement: 104 (10 officers, 94 men)
General
Nautilus commissioned on 30 Sep. 1954 and carried
out first trials on 17 Jan. 1955, Designed to travel
faster under water than on the surface. Her prow is
bulbous to obtain better underwater performances compared with convent'onal submarines designed for top
speed on the surface and which have knife blade prows.

Diving depth 700 feet. The world's first nuclear powered

ship.
Engineering
Nautilus has three engine room levels, with propulsion Nautilus has three engine room levels, with propulsion by nuclear, diesel, or electric power. She refuelled for the first time in 1957 after 26 months and 69,138 miles on the original core of enriched uranium. The second reactor was pulled and replaced in 1959 during routine overhaul after 26 months and steaming 93,000 miles, of which 78,885 was under water. Photographs

Aerial and surface port how views of Nautilus appear.

Photographs
Aerial and surface port bow views of Nautilus appear in the 1955-56 to 1957-58 editions, and a starboard quarter oblique surface view in the 1958-59 to 1961-62 editions. A port bow surface view of Seawolf appears in the 1957-58 to 1960-61 editions. A photograph of Seawolf and Nautilus together appears in the 1957-58 to 1962-63 editions.



1963, Electric Boat Division, General Dynamics Corporation

Transport Submarines (APSS) (Ex-Guided Missile Submarines, SSG)

2 "Grayback" Class

Displacement:

Grayback 2,980 tons surface, 3,638 tons submerged. Growler 2,174 tons surface, 3,387 tons

Dimensions: Machinery:

2,174 tohs surface, 3,307 tohs submerged Grayback: 332½×30×17½ feet Growler: 317½×27½×17 feet 3 Fairbanks Morse diesels. 2 shafts. S.H.P.: 3,100=20 kts. surface. Elliott electric motors= 18 kts. submerged 67 (7 officers, 60 men)

Complement:

General

A streamlined type with a conventional engine of improved design, Grayback was built under the 1953 F'scal Year programme and Growler under the 1955 programme. Originally intended to be attack submarines, but it was announced on 27 Feb. 1956 that they would be completed as guided missile submarines. Missile Operation

would be completed as guided missile submarines.

Missile Operation
Grayback was the first submarine bu'lt expressly with guided-missile capability. Other submarines had been converted with deck-top hangars to fire "Regulus", but Grayback was the first constructed to carry and fire "Regulus" with her missile capability bu'lt in. Twin cylinder-shaped hangars, faired into the upper hull forward, contained the missiles. Immediately aft of the hangars was the launching platform from which "Regulus" was fired. The missile hangars gave a slightly different hull conformation, an improvement over the "Tang" class fast attack submarines and streamlined to assure high underwater speed. The SSG had all the usual offens've capabilities of an attack submarine, including extensive anti-submarine warfare equipment and performance characteristics equal to the most mo-

GRAYBACK

APSS 574 APSS 577

Mare Island Naval Shipyard Portsmouth Naval Shipyard

Laid down 1 July 1954 15 Feb. 1955

2 July 1957 5 Apr. 1958

Completed 31 July 1958 15 Dec. 1958



GROWLER

dern non-nuclear attack submarine. She could surface at any time and automatically slide the "Regulus" missile from a cell buried in her hull into firing position. Within moments after surfacing she could fire the missile, then dive immediately. Strong seas and winds and foul weather did not handicap the missile

1959, United States Navy, Official

Conversion
In Dec. 1966 to Dec. 1967 Grayback is being converted into a Transport Submarine and her missile capability removed under the Fiscal Year 1965 Conversion Programme at Mare Island Naval Shipyard at a cost of \$15,200,000 She will carry conventional torpedoes and transport 60 troops. Growler is awaiting similar conversion.



1963, United States Navy, Official

High Speed Attack Submarines (SS)

3 "Barbel" Class

Displacement:

1,750 tons surface, 2,637 tons

submerged 219×29×19 feet Dimensions:

Tubes: Machinery:

219×29×19 feet 6—21 inch 3 Fairbanks Morse diesels, Elec-tric drive, I shaft, S.H.P.: 3,100 =15 kts. surface, 25 kts. sub-merged 77 (8 officers, 69 men)

Complement:

General

General
Provided under the 1956 Naval Appropriations. They have the "Albacore" type hull configuration. The bow planes in Barbel now extend from the "sail". These were the last conventionally powered submarines to join the United States Fleet. All subsequent submarines built in the U.S.A. are nuclear powered, except the experimental deep diving small auxiliary submarine Polishin marine Dolphin,

Fhotographs
A photograph of Barbel appears in the 1959-60 to 1963-64 editions.

Submarines—contd.

No

SS 580 SS 581

SS 582

BARBEL BLUEBACK BONFFISH

Builders
Portsmouth Naval Shipyard
Ingalls Shipbuilding Corporation
New York Shipbuilding Corporation

Laid down Launched Completed 18 May 15 Apr. 3 June 19 July 1958 16 May 1959 22 Nov. 1958 l Apr. 1959 3 June 1960 11 July 1959



BLUEBACK

1964, United States Navy, Official

I Improved "Tang" Class

SS 576 DARTER

Displacement:

Dimensions: Tubes: Machinery:

1,720 tons surface, 2,388 tons submerged 268½ × 27½ × 19 feet 8—21 inch (6 bow, 2 stern) Fairbanks Morse diesels. 2 shafts. S.H.P.: 4,000=17 kts. (surface); Elliott electric motors=25 kts. (submerged) 83 (8 officers, 75 men)

Complement:

General General
Designed for significantly higher submerged speed. An exceptionally quiet submarine. Equipped with snorkel. Built by Electric Boat Division, General Dynamics Corporation. Laid down on 10 Nov. 1954. Launched on 28 May 1956. Commissioned on 20 Oct. 1956.



DARTER

1958, U.S. Navy, Official

Attack Submarines (SS)

Ex-Radar Picket Submarines (SSR) 2 "Sailfish" Class

Displacement:

Dimensions: Tubes:

Machinery:

2,425 tons surface, 3,168 tons submerged 350 $\frac{1}{2}$ (o.a.) \times 29 \times 16 $\frac{1}{2}$ feet 6—21 inch (forward). 12 torpedoes

6—21 inch (forward). 12 torpedoes stowed Fairbanks Morse diesels. 2 shafts. S.H.P.: 6,000=20·5 kts. surface; Elliott electric motors=15 kts. submerged. 96 (11 officers, 85 men)

Complement: General

Ordered on 27 Feb. 1952. Built by Portsmouth Naval Shipyard. Commissioned on 14 Apr. 1956 and 25 Aug. 1956, respectively. Fitted with air control centre.

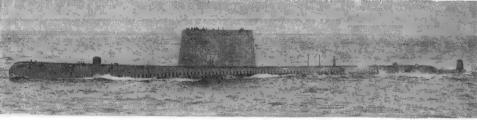
Conversion
In 1959 Salmon was modified, at the expense of some search radar, to serve as a missile guidance submarine as well as a radar picket. The deck mounted radar was re-moved in 1961. Both underwent FRAM II conversion in Fiscal Year 1964. SAILFISH SALMON

SS 572 SS 573

Builders Portsmouth Naval Shipyard Portsmouth Naval Shipyard

Laid down Launched 8 Dec. 1953 10 Mar. 1954 7 Sep. 1955 25 Feb. 1956

Completed 30 Sep. 1956 31 Dec. 1956



SAILFISH

1965, United States Navy, Official

Photographs Reclassification

A photograph of Salmon appears in the 1959-60 to 1964-65

Both were reclassified from SSR to SS in Mar. 1961. editions.

High Speed Test Submarine (AGSS)

I Experimental Prototype

AGSS 569 ALBACORE

Displacement:

1,218 tons surface, 1,847 tons sub-

Dimensions: Machinery:

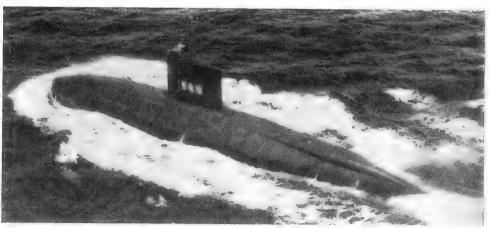
1,218 tons surface, 1,2...
merged
204 (o.a.) × 27½ × 18½ feet
2 G.M. diesels, radial pancake type
=25 kts. surface; I Westinghouse
electric motor. I shaft S.H.P.:
1,700=33 kts. submerged see Con-

Complement:

version 52 (5 officers and 47 men)

General
High speed experimental submarine. Built by Portsmouth
Naval Shipyard. Laid down on 15 Mar. 1952. Launched on
I Aug. 1953. Completed on 5 Dec. 1953. Conventionally
powered submarine of radical design with new hull form
which makes her faster and more manoeuvrable than any
other conventional submarine. Officially described as a
hydrodynamic test vehicle. Streamlined, whale-shaped
without the naval flat-topped deck. Conning tower modelled
on a fish's dorsal fin.

Conversion
Phase I (1953): cruciform stern. Phase II (1956): open stern, plastic sonar bow. Phase III (1959): improved sonar system, enlarged dorsal rudder, dive brakes on after sail section. Phase IV (1961): Electric drive, contra-rotating



ALBACORE

motors and 2 propellers contra-rotating about the same axis. A high capacity, long endurance silver zinc battery providing power to drive her at 33 kts. submerged

(commenced in Dec. 1962, completed on 20 Feb. 1965). Conversions were carried out at Portsmouth Naval Ship-

1962, United States Navy, Official

High Speed Attack Submarines (SS)

6 "Tang" Class

1,615 tons standard, 1,800 tons surface, 2,400 tons submerged 269 or 278 (o.a.)×27\frac{1}{3}×17 feet 8—21 inch (6 bow, 2 stern) 3 Fairbanks-Morse diesels. B.H.P.: 4,200=15 or 20 kts. surface. Electric motors. H.P.: 3,200=18 kts. submerged 250 tons Displacement: Dimensions: Machinery:

Oil fuel: 350 tons 83 (8 officers, 75 men) Complement:

General

Complement: 83 (8 officers, 75 men)

General

This class embodied various improvements based on war experience to give higher submerged speed, with a development of the Schnorkel breathing tubes. They are streamlined deep-diving vessels but have comparatively short hulls. Trigger was the first submarine of the post-war programme to be laid down. Tang was the first of the new class to be completed (first large submarines to be constructed by the U.S. Navy since the Second World War). The hull is shorter than previous fleet types and this reduction in length is said to contribute to the underwater speed. Gudgeon was the first United States submarine to circumnavigate the world during Sep. 1957-Feb. 1958.

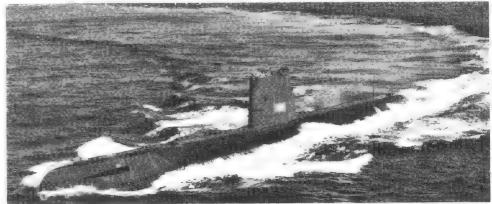
Engineering

Tang, Trigger, Trout and Wahoo were originally powered by a compact radial type engine produced after five years of development work, comprising a 16-cylinder 2-cycle plant, mounted vertically with four rows of cylinders radially arranged. These new engines were only half the weight and approximately two-thirds the size of the engines previously available for use in submarines. They proved to be unsatisfactory and were replaced by machinery similar to that in Gudgeon and Harder which have a Fairbanks-Morse high speed lightweight engine mounted horizontally. The electric motors are Elliott in Tang and Trigger, General Electric in Wahoo and Trout, Westinghouse in Gudgeon and Harder.

Reconstruction
In 1957 Tang, Trigger, Trout and Wahoo were provided with an extra centre section, 9 feet long, to accommodate three new Fairbanks-Morse 1,400 B.H.P. "in-line" diesels to replace the "pancake" type. The vessels were cut in halves, the sections inserted, and welded together again.

Submarines—contd.

	No.	Builders	Laid down	Launched	Completed
GUDGEON HARDER TANG TRIGGER TROUT WAHOO	\$\$ 567 \$\$ 568 \$\$ 563 \$\$ 564 \$\$ 566 \$\$ 565	Portsmouth Naval Shipyard Electric Boat Co., Groton Portsmouth Naval Shipyard Electric Boat Co., Groton Electric Boat Co., Groton Portsmouth Naval Shipyard	30 June 50 18 Apr. 49 24 Feb. 49 1 Dec. 49	11 June 52 3 Dec. 51 19 June 51 14 June 51 21 Aug. 51 16 Oct. 51	



TANG

1966, Direct from U.S.S. Tang, courtesy C.O.



WAHOO

1960, United States Navy, Official

Photographs A photograph of Trigger appears in the 1955-56 to 1959-60 editions, of Trout in the 1955-56 to 1960-

editions, of Harder in the 1961-62 to 1965-66 editions.

Submarines (SS) 23 "Tench" Class

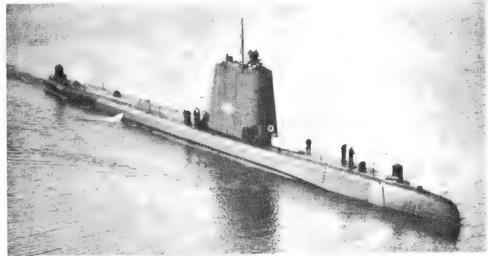
23 Tench Class		
4 Boston Naval Shipyard	Launci	hed
G 522 AMBERJACK	15 Dec.	1944
G 523 GRAMPUS	15 Dec.	1944
G 525 GRENADIER	15 Dec.	1944
FG 524 PICKEREL	15 Dec.	1944
2 Cramp S.B. Co.		
FG 425 TRUMPETFISH	19 Feb.	1944
G 426 TUSK	8 July	1945
17 Portsmouth Naval Shipyard		1044
475 ARGONAUT	1 Oct.	1944
G 478 CUTLASS	5 Nov.	1944
482 IREX	26 Jan. 15 Dec.	1944
480 MEDREGAL		1945
G 484 ODAX	10 Apr. 6 Dec.	1945
G 486 POMODON	1 Oct.	
G 424 QUILLBACK (ex-Trembler)	7 Dec.	1945
FG 487 REMORA	17 Oct.	1944
476 RUNNER AG	2 Mar.	
G 483 SEA LEOPARD	5 May	
G 485 SIRAGO	7 July	
G 417 TENCH G 418 THORNBACK	7 July	
		1944
G 420 TIRANTE 423 TORSK	6 Sep.	
		1944
	17 Jan.	1946
FG 490 VOLADOR	jan.	

1,570 toms standard, 1,800 tons surface (2,500 tons submerged)
311½ (o.a.), Guppies 306 (length varies)×27½×17 feet
10—21 inch (6 bow, 4 stern)
4 diesels. B.H.P.: 6,500=20 kts. (surface). 4 electric motors. S.H.P.: 4,610=10 kts. (submerged). Guppies 15 kts.
300 tons
14,000 miles at 10 kts.
82 (8 officers, 74 men) Displacement: Dimensions: Tubes: Machinery:

Oil fuel: Radius: Complement:

Radius: 14,000 miles at 10 kts.
Complement: 82 (8 officers, 74 men)
General
Enlarged and improved version of the "Balao" class design, able to dive to 100 fathoms. Nearly all fitted with Schnorkel breathing apparatus. Pickerel, commissioned on 4 Apr. 1949, made a 5,200 miles run from Hong Kong to Pearl Harbour in 21 days without surfacing in 1950. In 1952 she surface at a 48 degree angle from a depth of 150 feet, one of the steepest ever attempted. Both tests were made to evaluate the capabilities and design characteristics of "Guppy" type submarines. Requin, Spinax and Tigrone were converted to Radar Picket Submarines (see later page). Grenadier commissioned on 10 Feb. 1951.

93 more of this class were cancelled during 1944-45
AG Runner was reclassfied as AGSS in June 1964.
FG FRAM II/GUPPY III conversions, which include a new 15-ft., 40-ton section with 5-ft, longer "sail."
G Units marked G are of the "Guppy" (Greater Underwater Propulsive Power) design equipped with the latest devices. Argonaut, Irex, Medregal, Runner, Torsk carry snorkels but are not Guppy conversions.



TRUMPETFISH

1965, Stefan Terzibaschitsch



THORNBACK

1964, Wright & Logan

Photographs
Photographs of Grenadier and Odax appear in the 1957-58 to 1960-61 editions, of Grampus in the 1958-59 to 1962-63 editions, and of Runner in the 1961-62 to 1964-65 editions.

Transfers Diablo, AGSS 479, was loamed to Pakistan on 1 June 1964.

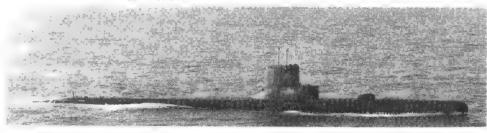
The partly constructed Ulua, SS 428, used for tests, was scrapped in 1958. Unicorn, SS 436, and Walrus. SS

437, suspended after the Second World War, were stricken from the Navy List on 9 June 1958 and scrapped. The partly constructed Turbot, SS 427, was used for tests by the Navy Engineering Experimental Station, Annapolis, Corsair, AGSS 435, was stricken from the list in 1963, Toro, SS 422, was towed from Philadelphia naval base on 14 May 1963 to be sunk off Cape Cod as a sonar target in an attempt to find the lost Thresher. Conger, SS 477, was stricken on 1 Aug. 1963 and disposed of as a target. Sarda, AGSS 488, was stricken on 1 June 1964 and sold.

68 "Balao" Class (SS and AGSS) 8 Cramb S.B. Co. Launched SS 292 DEVILEISH AG 30 May 1943 295 297 HACKLEBACK AG LING AG LIONFISH AG May 1943 Aug. 1943 18 Aug. 7 Nov. T 298 1943 MORAY AG RONCADOR AG 14 14 May May May 300 1944 302 SABALO lune 1944 303 SABLEFISH June 1944 Boat Co. ARCHERFISH AG BATFISH (ex-Acoupa,) AG 25 Electric 311 T 310 29 29 May 3 May 1943 30 Jan. 2 Mar. 9 Apr. 319 BECUNA 1944 12 Mar. 9 Apr. 2 July 27 Aug. 30 Mar. G 377 BL ACKEIN BLENNY BUGARA 324 331 1944 CABEZON T AG CAIMAN (ex-Bjanquilo,) CARBONERO 334 323 1944 337 15 Oct. 1944 Nov. 1944 338 CARP 12 19 CATFISH CHARR AG (ex-Bocacc'o,) G 28 328 May 1944 14 14 Jan. Feb. G 341 CHIVO 1945 G FG FG 342 343 344 CHOPPER CLAMAGORE COBBLER 23 Feb. 1945 Apr. June 1945 FG G 346 347 CORPORAL CUBERA CUSK 1945 1945 10 17 June 28 July 10 Sep. 10 Sep. 388 1945 DENTUDA AG DIODON 335 349 1944 1945 T G G Oct. 350 DOGFISH 27 1945 G 340 ENTEMEDOR (ex-Chiswick,) G 351 GREENFISH (ex-Doncella,) G 352 HALFBEAK (ex-Dory,)) 17 Dec. 21 Dec. 19 Feb. 1946 Manitowoc S.B Co. G 365 HARDHEAD G 368 JALLAO T 374 LOGGERHEAD AG G 377 MENHEDEN Dec. 1943 1944 12 Mar. Aug. Dec. 20 1944 4 Mare Island Navy Yard 304 SEAHORSE AG 411 SPADEFISH AG FG 416 TIRU T 412 TREPANG AG 9 Jan. Jan. 1943 Sep. 1947 Mar. 1944 8 T 412 TREPANG AG 27 Portsmouth Navy Yard 403 ATULE G 385 BANG T 286 BILLFISH AG T 287 BOWFIN AG T 288 CABRILLA AG T 291 CREVALLE AG T 383 PAMPANITO AG T 384 PARCHE AG 382 PICUDA (Obisto,) 387 PINTADO AG 388 PIPEFISH AG 409 PIPER (ex-Awa,) 389 PIRANHA AG G 391 POMFRET 394 RAZORBACK Mar. 1944 30 13 7 Aug. Nov. 1943 1942 1943 Dec. Feb. 1942 Feb. 1943 24 Feb. 22 Feb. 12 July 12 July 12 July 12 Oct. 26 June 27 Oct. 27 Oct. 27 Jan. 27 Jan. 27 Jan. 28 Mar. 7 May 20 May 25 May 1943 1943 1943 1943 1943 1944 1943 1943 394 395 RAZORBACK REDFISH AG RONQUIL 1944 1944 1944 G 396 396 RONQUIL 399 SEA CAT 401 SEA DOG AG 402 SEA FOX 405 SEA OWL SSK 406 SEA POACHER 407 SEA ROBIN 398 SEGUNDO 1944 1944 T 1944 1944 1944 1944 5 6 27 Feb. June 1944 1944 392 STERLET Oct. 1943 G 410 THREADFIN (ex-Sole,) 26 June 1944 Displacement: 1,526 tons standard, 1,816 tons 1,526 tons standard, 1,816 tons surface, 2,425 tons submerged 311½×27×17 feet (Guppy conversion 309 (o.a.) feet. FG conversion 326½ (o.a.) feet, but length varies) see FG Notes 10—21 inch (6 bow, 4 stern), 24 torpedoes G.M. or Fairbanks-Morse diesels B.H.P.: 6,500=20 kts surface. S.H.P.: 4,610 to 5,500=10 to 17.25 kts submerged Dimensions: Tubes: Machinery: 17.25 kts. submerged 300 tons 12,000 miles at 10 kts Oil fuel-Radius: Complement: 80 (8 officers, 72 men) General

To facilitate rapid building, all were of the same

Submarines—contd.



SEA ROBIN

1966. Skyfotos



SEA POACHER

1966. Dr. Giorgio Arra



CLAMAGORE

1963, United States Navy, Official

general type as the "Gato" class, and of all-welded construction. Average time of construction during the war was reduced to nine mounths. High standard of accommodation, including separate messing and sleeping compartments. War losses: Barbel, Bullhead, Capelin, Cisco, Escolar, Golet, Kete, Lagarto, Shark, Tang. 16 cancelled: Dugong, Eel, Espada, Garloppa, Gauppa, Goldring, Jawfish, Needlefish (379), Nerka, Ono, Turbot, Ulua, Vandance (431), Whitefish, Whiting, Wolffish. Apogan, Pilotfish and Skate were scrapped after being employed as atom bomb targets at Bikini 1946. Seallon and Perch were fitted to carry troops. Burfish was modified for radar picket duties, Guavina was converted to oiler. Baya was equipped for electronic experiments (see later pages).

G 29 units converted into "Guppies". T 15 training units with torpedo tubes welded shut and propellers removed. AG indicates units reclassified as AGSS, 23 of this class were reclassification of Cusk to AGSS on 1 Dec. 1962. The reclassification of Cusk to AGSS on 1 July 1966. Carbonero and Cusk converted to SSG, were subsequently reclassified as SS. Barbero was equipped to carry cargo and reclassified ASSA, but was subsequently converted to a guided missile submarine SSG. Bugara, Carbonero, Carp, Charr, Cusk, Piper, Sabalo, Sea Cat, Sea Owl, Segundo, Sennet, Sterlet have snorkels and are Fleet "Guppies." Sea Poacher has a bow similar to that of SSK but is not fitted as SSK. Archerfish is fitted for hydrographic work and is demilitarised. militarised. FG FRAM II/GUPPY III Conversions

FG FRAM II/GUPPY III Conversions

During her FRAM overhaul Tiru had an additional 12-ft, section added and the conning tower was extended by 5 ft, to provide for an attack centre. Fitted with non-corrodible laminated glass plastic "sail" (conning tower) and superstructure. The overhaul included increased fuel capacity, extra berthing accommodation, advanced electric systems, greater communication capabilities, and the ability to fire new advanced weapons. Tiru was the first submarine to undergo FRAM, (at Pearl Harbour Naval Shipyard). FRAM conversion adds 15 feet to the length and 55 tons to the displacement. FRAM conversion adds 15 tons to the displacement.

Photographs

Photographs
Photographs of Carbonero (guided missile on catapult), Cusk (equipped for guided missiles), Redfish and Sea Owl appear in the 1957-58 edition, of Clamagore in the 1957-58 to 1959-60 editions, of Piper in the 1957-58 to 1960-61 editions, of Sea Poacher in the 1958-59 to 1960-61 editions, of Cusk in the 1959-60 1961-62 editions, of Carbonera (after conversion from SSG to SS) in the 1960-61 to 1962-62 editions, of Tiru in the 1961-62 to 1964-65 editions, of Rongull in the 1962-63 to 1965-66 editions.

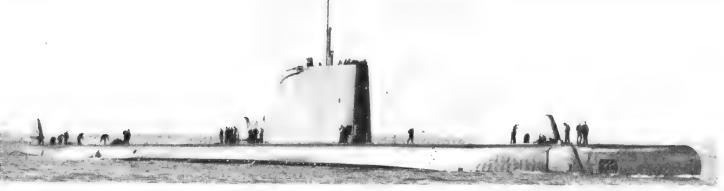
Transfers Transfers

Transfers

Blower, SS 325, Blueback, SS 326, Boarfish, SS 327,
Chub, SS 329, Brill, SS 330, Bumper, SS 333, to
Turkey, and Hawksbill and Icefish to Netherlands in
1953, on Ioan for five years, Bergall, SS 320, to
Turkey in 1958, and Mapiro SS 376, and Mero, SS
378 to Turkey in 1960, Lizardfish, SS 373, to Italy
in Jan. 1960, Kraken, SS 370 to Spain in Oct, 1959,
Tilefish, SS 307, to Venezuela in 1960, Lamprey, SS
372, to Argentina on 21 July 1960, and Macabi, SS
375, to Argentina, Springer, SS 414 to Chile on 23
Jan. 1961, Burrfish, SSR 312, reclassified SS in Mar.
1961, to Canada on 11 May 1961, on Ioan for five
years, Sprat, SS 413, to Chile on 12 Jan. 1962, on Ioan
for five years, Plaice, SS 390, and Sand Lance, SS 381,
to Brazil in Aug. 1963, Scabbardfish, SS 397, to Greece
on 26 Feb. 1965, Besugo, SS 321, and Capitaine, SS
326, to Italy on 5 Mar. 1966.
Losses

326, to Italy on 5 Mar. 1966.
Losses
Coachino sank of northern Norway on 26 Aug. 1949,
Stekleback sank off Pearl Harbour, after ramming by
destroyer escort Silverstein on 29 May 1959.
Disposols

Disposals
Lancefish, suspended at end of Second World War, was stricken on 9 June 1958 and scrapped. Dragonet, SS 293, was stricken in 1961 and expended as a target. Aspro, AGSS 309 was stricken in Sep. 1962. Queenfish, AGSS 393, was stricken on 1 Mar. 1963 and disposed of a target, and Spikefish, SS 404, was stricken on 1 May 1963 and expended as target on 4 Aug. 1964, Balao, AGSS 285, was stricken in Sep. 1963, and Sea Devil, AGSS 400 on 1 Apr. 1964.



Ex-Radar Picket Submarines

3 Converted "Tench" Class

	No.	Builders	Launched
REQUIN	SS 481	Porsmouth	1 Jan. 1945
SPINAX	SS 489	Navai	20 Nov. 1945
TIGRONE	AGSS 419	Shipyard	20 July 1944

Displacement:

Tubes: Machinery:

1,570 tons standard, 1,800 tons surface (2,500 tons submerged) 312 (o.a.) × 27 × 17 feet 6—21 inch forward Diesels. B.H.P.: 6,500=20 kts. surface. Electric motors. H.P.: 2,750=10 kts. submerged Dimensions:

Oil fuel:

300 tons 14,000 miles at 10 kts. Radius: Complement:

General

General

Before conversion into Radar Picket Submarines,
SSR these vessels were orthodox submarines of the
"Tench" class, see earier page. Spinax was laid down
on 14 May 1945. Tigrone was completed on 21 Feb.

Submarines—contd.



SPINAX

1949. Units vary in detail. Guns were removed. In 1959 Requin and Spinax had their big radar antennae, complicated conning tower and air-control centre removed and they were fitted with a stremlined conning tower. All three were reclassified from SSR to SS on 15 Aug. 1959. Tigrone was reclassified as AGSS on 1 Dec. 1963.

Official 1965. United States Navy,

Photographs Of Tigrone in 1952-53 to 1957-58 editions, of Requining the 1953-54 to 1961-62 editions. Transfer

Burrfish, SSR 312, reclassified as SS in Mar. 1961, was transferred to the Royal Canadian Navy on 11 May 1961, on loan for five years, and renamed Grilse.

4 Converted "Gato" Class

Displacement:

1,750 tons standard, 1,800 tons

Dimensions: Machinery:

surface (2,500 tons submerged) 343×27×17 feet G.M. 2-stroke diesels. B.H.P.: 6,500=21 kts. (surface). Electric motors. H.P.: 2,750=10 kts. (submerged) 300 tons

Oil fuel: 300 tons

Radius:

12,000 miles at 10 kts. 85

Complement:

General

Before conversion into Radar Picket Submarines, SSR, these were conventional submarines of the "Gato" class, see later page. They were cut in two to permit the installation of new electronic equipment. Two new midsections lengthened them by 31 feet from their original 311½ feet and increased their displacement from their original 1,525 tons. Redfin re-commissioned 9 Jan. 1953, Rock 12 Oct, 1953, Redfin was reclassified from SSR to SS in 1959 and to AGSS in June 1963, and Rasher, Raton, and Rock to AGSS in 1960.

Pompon, SSR 267, and Ray, 271, were stricken from the Navy List at the end of 1960.

	No.	Builders	Laid down	Launched:	Completed
RASHER	AGSS 269	Manitowoc Shipbuilding Co.	4 May 1942	20 Dec. 1942	8 June 1943
RATON	AGSS 270	Manitowoc Shipbuilding Co.	29 May 1942	24 Jan. 1943	13 July 1943
REDFIN	AGSS 272	Manitowoc Shipbuilding Co.	3 Sep. 1942	4 Apr. 1943	31 Aug. 1943
ROCK	AGSS 274	Manitowoc Shipbuilding Co.	23 Dec. 1942	20 June 1943	26 Oct. 1943



REDFIN

1961, United States Navy, Official

Experimental Submarines (AGSS)

2 Converted "Balao" Class Displacement:

Dimensions:

1,526 tons standard, 1,900 tons 1,326 tons standard, 1,700 tons surface (2,625 tons submerged) 311½ (o.a.), Baya 334¼ (o.a.) ×27×17 feet Diesels. B.H.P.: 6,500=20 kts. H.P.: 2,750=15 kts. submerged 12,000 miles at 10 kts.

Machinery:

Radius: Complement: General

Baya was converted to a laboratory submarine for electronic experiments, and Manta to a target submarine.

electronic experiments, and Manta to a target submarine. Reconstruction
In 1958-59 Baya was cut in two at the San Francisco
Naval Shipyard and a 23-ft, section inserted amidships
between the forward torpedo room and the forward battery room. She was fitted with a bigger and blunter bow
to house electronic gear, two booms to act as sonar
antennae when extended, a mushroom anchor in the bottom of the submarine in a recess built into the hull,
living quarters for 12 research laboratory scientists, and
a LORAD arti-submarine detection system (long range).
In 1960 she was assigned to the operational test and
evaluation force.

No. AGSS 318 AGSS 299 Builders
Electric Boat Division, Groton
Cramp Shipbuilding Co. Combleted Laid down Launched 9 Apr. 1943 15 Nov. 1942 20 May 1945 20 Jan. 1945 MANTA



BAYA (round prow pushes water away at high speeds)

No.

1960, courtesy "Our Navy"

Target and Training Submarines

2 "T" Class (SST)

Displacement:

Dimensions: Tubes: Machinery:

250 tons standard, 303 tons surface (347 tons submerged)
131½ (o.a.) × 13½ × 12½ feet
1 forward
G.M. diesels. I shaft. Elliott electric motors. S.H.P.: I,050 =
10 kts. surface and submerged
18 tons
2,000 miles at 10 kts.
18 (2 officers, 16 men)

Oil fuel: Radius: Complement:

General

General

Marlin was ordered on 17 Mar. 1951. Smallest submarine built for 47 years. Useful in landing raiding
parties. Same general appearance as "Guppy" type submarines. Mackerel was ordered on 5 Jan. 1952. Classification SST and former name TI superseded AGSS 570,
the classification and number originally assigned to
Mackerel. For training surface and air anti-submarine
forces. Renamed in 1956. Cost \$3,000,000 each.

MACKEREL MARLIN

SST 1 (ex-T 1) SST 2 (ex-T 2)

Launched Combleted Builders Laid down Electric Boat Co., Groton Portsmouth Naval Shipyard 12 May 1952 1 Apr. 1952 14 Oct. 1953 17 July 1953 28 Nov. 1953 9 Oct. 1953



MARLIN

1965, United States Navy, Official

Photographs A photograph of Mackerel appears in the 1955-56 to 1964-65 editions

Ex-Guided Missile Submarine (SSG)

I Converted "Gato" Class

Displacement:

1,525 tons standard, 1,816 tons

Dimensions: Machinery:

surface (2,425 tons submerged) 311½×27×17 feet Diesels. B.H.P.: 6,500=21 kts. (surface). Electric motors. H.P.: 2,750=10 kts. (submerged)

Oil fuel: Radius: Complement: 2,730 tons 12,000 miles at 10 kts. 81 (9 officers, 72 men)

General
Before conversion was of "Gato" class, see later page,
Converted by Mare Island Naval Shipyard, Vallejo, California. She was modified at Pearl Harbour Naval Shipyard to handle the now cancelled "Regulus II" guided
missile, Reclassified as SS on 15 May 1966.

yard to handle the now cancelled "Regulus II" guided missile, Reclassified as SS on 15 May 1966.

Guided Missiles

Was equipped with "Regulus I" guided missiles 32½ feet long, and guidance equipment. Submarines fitted with missile guidance equipment but not fitted for launching guided missiles were Cusk, Carbonero, Torsk, Argonaut and Runner.

Submarines—contd.

Builders TUNNY SS (ex-SSG) 282 Mare Islad Naval Shipyard

Completed 1 Sep. 1942

Laid down 10 Nov. 1941

Launched 1 July 1942



TUNNY (1 Regulus 1 surface-to-surface guided missile aboard) Added 1959, United States Navy, Official

Photographs

Photographs
Sequence photograps of "Regulus 1" rolled from the hangar of Tunny, being boosted, and soaring towards its target, in the 1957-58 edition. Photograph of Tunny showing "Regulus 1" being hauled into deck hangar with another missile already in position, in the 1959-60

edition. Photograph of Barbero, showing "Regulus I" in launching position, in the 1959-60 to 1963-64 editions

Disposal

The converted "Balao" class guided missile submarine
Barbero, SSG 317 (ex-ASSA, ex-SS) was stricken from
the Navy List on 1 July 1964 and expended as a target.

Transport Submarines (APSS)

Amphibious Troop-carrying Type

2 Converted "Balao" Class

Displacement:

1,526 tons standard, 1,900 tons

Dimensions:

surface (2,500 tons submerged) $311\frac{1}{2}\times27\times17$ feet

Machinery:

311½×27×17 feet 2—40 mm. AA. 2 G.M. diesels. S.H.P.: 2,305 =13 kts. surface. (2 of 4 engines were removed for additional troop space which reduced speed). 300 tons

Oil fuel: Radius: Complement:

12,000 miles at 10 kts.
74 (6 officers, 68 men).
commodation for 14 of 170 men. officers

General

General
Perch was converted at Mare Island Shipyard in 1948, and Sealion at San Francisco Naval Shipyard, to carry 160 troops each. Both vessels were formerly fleet submarines of the "Balao" class, see earlier page. Now classed as "Amphibious Vessels Submarine Transport," (Can carry 160 Marines, Commandos or Frogmen). Conversion of Sealion was completed 15 Dec. 1948. Torpedo tubes removed, in 1960 Perch was decomissioned and Sealion was assigned to Naval Reserve training, Both recommissioned in Oct. and Nov. 1961. Photographs Photographs

A photograph of Perch, showing amphibious hangar, appears in the 1949-50 to 1959-60 editions, and of Sealion in the 1957-58 to 1964-65 editions.

Appearance
The hull bulges out prominently abaft the conning

Disposal
The converted "Gato" class experimental submarine
Flying Fish, AGSS 229, was scrapped in 1959.

PERCH SEALION

No. APSS 313 APSS 315

Electric Boat Div., Groton Electric Boat Div., Groton

Laid down 5 Jan. 1943 25 Feb. 1943

Launched 12 Sep. 1943 31 Oct. 1943

Completed 7 Jan. 1944 8 Mar. 1944



PERCH

1965, United States Navy, Official

Submarine Oiler

(AOSS, ex-AGSS, ex-SSO)

I Converted "Balao" Class

Displacement: Dimensions:

1,750 tons standard, 2,000 tons surface (2,730 tons submerged) $311\frac{1}{2}\times37\times17$ feet 4 G.M. diesels. S.H.P.: 4,160=

Machinery Oil fuel:

16 kts.

Complement:

300 tons (own fuel) 12,000 miles at 10 kts.

General

Before conversion into a Submarine Oiler, was an orthodox submarine of the "Balao" class. Fitted out at Mare Island Naval Shipyard at a cost of \$2,000,000 with exterior tanks for bulk liquids and special compartments which permit cargo in watertight cases to be discharged while the craft is submerged. Beam increased from 27 to 37 feet. Recommissioned I Feb. 1950. Formerly classified as Submarine Oiler, SSO, but later reclassified as AGSS (Auxiliary Submarine), and again reclassified as AOSS on 22 June 1957. Fitted

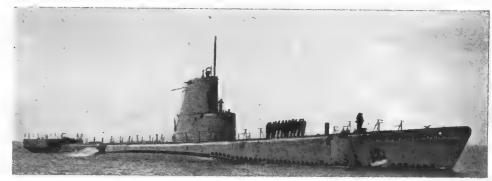
GUAVINA

No. AOSS 362

Builders Manitowoc Shipbuilding Co.

Launched 29 Aug. 1943

Completed 23 Dec. 1943



GUAVINA

for refuelling seaplanes. Now assigned to naval reserve training with tubes welded shut and propellers removed. To be inactivated in 1966. Snorkel transferred to Capitaine (turned over to Italy) in 1966,

AGSS 555

Added 1959, Wright & Logan

Photograph

Starboard broadside view in the 1955-56 to 1957-58 editions. Starboard quarter view, showing stern tank, in the 1957-58 to 1959-60 editions

Experimental Deep-Diving Submarines

I New Construction

Displacement:

600 tons surface, 950 ton sub-

Dimensions: Machinery:

merged
152×18× feet
1—21 inch (bow)
Diesel-electric, battery systems,

shaft Complement:

\$20,000,000

DOLPHIN

Portsmouth Naval Shipyard

Laid down 9 Nov. 1962

Launched 20 Mar. 1965

General

Auxiliary experimental deep-diving submarine with Auxiliary experimental deep-diving submarine with single screw, diesel-electric, battery systems, for special non-nuclear experimental purposes, Authorised under the 1961 programme. Constant diameter pressure hull closed with hemispheres. Superstructure, rudder, fairwater constructed of glass reinforced plastic. HY-80 steel hull permits 2,000 feet operational depth. To be completed in Aug. 1967 (revised schedule). New Construction

NR 1. Test Vehicle, Deep-diving nuclear powered

research submarine, To be designed and built by Electric Boat, General Dynamics, HY-80 steel hull. Portholes for viewing, camera, recovery apparatus, two external pods with thruster motors to move bow and stern. 600 feet, 1 water-cooler reactor, crew of 5 plus 2 observers.

6 Submarine Rescue Vehicles. First building by Lockheed Missile & Space Co. Air transportable. Will carry 12 to 14 survivors per trip from sunken submarine. 25 tons, 44 feet, 2 crew, 5 knots, 3,000 ft. limit, 12 hours endurance at 3 knots.

Ex-Submarine Hunter Killers

7 Converted "Gato" Class (AGSS, ex-SS, ex-SSK)

1,525 tons standard, 1,816 tons surface (2,425 tons submerged) 311½×27×15 feet Diesels, B.H.P.: 6,500=21 kts. (surface). Electric motors. H.P.: 2,750=15 kts. Dimensions:

Machinery:

Oil fuel:

(submerged) 300 tons 10,000 miles at 10 kts. Radius: Complement: 80

Originally completed as units of the "Gato" class. Grouper was converted and redesignated SSK (Large) in 1950, and the remainder in 1951-53. Reclassification

Reclassification
Grouper was again reclassified from SSK to AGSS on 21 June 1958 to carry out experiments for the Underwater Sound Laboratory, Angler, Bashaw, Bluegill, Bream, Cavalla, and Croaker were reclassified from SSK to SS on 15 Aug. 1959. Bashaw was reclassified as AGSS on 1 Sep. 1962, Angler and Cavalla in 1963.
Reclassification of Bream to AGSS was cancelled, but the war reclarified as AGSS on 15 Apr. 1965.

she was reclassified as AGSS on 15 Apr., 1965.

Operational
Angler was assigned to naval reserve training in Sep.
1963. She made her 10,000th dive on 9 Nov. 1965.

Experimental

Experimental Grouper underwent a seven month overhaul in 1960 which radically altered her appearance. Several new research sonar devices installed for determining underwater sound characteristics in various parts of the world's oceans. Bow fitted with special large transducers; forward torpedo room converted into a laboratory with test equipment; facilities include berthing for scientists, sonar room. Hydrophones provide for a total of 261 transducers for research purposes.

Submarines-contd.

	No.	Builders	Laid down	Launched	Completed
ANGLER	AGSS 240	All built by	9 Nov. 1942	4 July 1943	1 Oct. 1943
BASHAW	AGSS 241	Electric Boat	4 Dec. 1942	25 July 1943	25 Oct. 1943
BLUEGILL	SS 242	Company.	17 Dec. 1942	8 Aug. 1943	II Nov. 1943
BREAM	AGSS 243	Groton,	5 Feb. 1943	17 Oct. 1943	24 Jan. 1944
CAVALLA	AGSS 244	Connecticut	4 Mar. 1943	14 Nov. 1943	29 Feb. 1944
CROAKER	SS 246		1 Apr. 1943	19 Dec. 1943	21 Apr. 1944
GROUPER	AGSS 214		28 Dec. 1940	27 Oct. 1941	12 Feb. 1942



CROAKER

1965, A. & J. Pavia



GROUPER

1962, courtesy Mr. W. H. Davis

Submarines (AGSS, ex-SS) (Naval Reserve Training)

6 "Gato" Class

1,525 tons standard 1,816 tons surface (2,425 tons submerged) 311½ x 27x 15 feet Removed See General notes G.M. 2-stroke diesels. B.H.P. 6,500=21 kts. (surface). Electric motors, H.P.: 2,750=10 kts. (submerged). 300 tons 10,000 miles at 10 kts. 85 Displacement: Dimensions:

Oil fuel: Radius: Complement:

Complement: 85
General
Ordered under the 1939-41 Programmes. Have two engine rooms instead of one as in previous submarines to reduce size of compartments. War losses: Albacore, Amberjack, Bonefish, Corvina, Darter, Dorada, Flier, Growler, Grunion, Harder, Herring, Robalo, Runner, Scamp, Scorpion, Snook, Trigger, Tullibee, Wohoo. Alt the remaining boats of this class have been assigned to training duties with Naval Reserve units, their torpedo tubes (10—21 inch, 6 bow and 4 stern) having been welded shut and their propellers removed. Photographs

Photographs
A photograph of Hake at sea appears in the 1944-45 to 1964-65 editions, and of Silversides in the 1955-56 to 1964-65

1964-65 editions, and of Silversides in the 1733-30 to 1. editions. Class
Of this class Grouper was converted to a large submarine hunter-killer (SSK) in 1950 and Angler, Bashaw, Bluegill, Bream, Cavalla and Croaker were similarly converted to anti-submarine submarines (SSK) in 1951-53. Pompom, Rasher, Raton, Ray, Redfin and Rock were converted to Radar Picket Submarines (SSR); and Flying Fish (scrapped in 1959) was converted to an experimental submarine (AGSS). Tunny was converted to a Guided Missile Submarine (SSG) in 1953.

Transfers

marine (SSG) in 1953.

Transfers
Barb, SS 220, and Dace, SS 247, were transferred to
Italy in 1954. Guittaro, SS 363, and Hammerhead, SS
364, to Turkey (loans extended for five years in 1959).

Mingo, SS 261, to Japan in Aug. 1955 on loan for five
years. Muskallunge, SS 262, and Paddle, SS 263, were
loaned to Brazil in Jan. 1957. Jack, SS 259, and Lapon,
SS 260, to Greece in 1957 (Jack transferred on 21
Apr. 1958, Lapon on 8 Aug. 1957).

	No.	Builders	Laid down	Launched	Completed
CERO	AGSS 225	Electric Boat Co., Groton	21 July 1942	21 Mar, 1943	21 June 1943
COBIA	AGSS 245	Electric Boat Co., Groton	24 Aug. 1942	4 Apr. 1943	3 July 1943
COD	AGSS 224	Electric Boat Co., Groton	11 Sep. 1940	12 May 1941	23 Dec. 1941
DRUM	AGSS 228	Portsmouth Navy Yard	4 Nov. 1940	26 Aug. 1941	15 Dec. 1942
HAKE	AGSS 256	Electric Boat Co., Groton	17 Mar. 1943	28, Nov. 1943	28 Mar. 1944
SILVERSIDES	AGSS 236	Mare Island Navy Yard	1 Nov. 1941	17 July 1942	30 Oct. 1942



HAKE

May, 1964, Philadelphia, courtesy Dr. Ian S. Pearsall

Reclassification

All the remaining units of this class were reclassified from SS to AGSS on I Dec. 1962. Disposals

Disposals
Blackfish, SS 221, Finback, SS 230, Gunnel, SS 253,
Haddo, SS 255, Pogy, SS 266, and Tinosa, SS 283, were
stricken from the Navy List early in 1959, Bluefish, SS
222, Flasher, SS 249, Flounder, SS 251, and Gabilan, SS 252,
late in 1959, Gato, SS 212, Greenling, SS 213, Guardfish,

SS 217, Haddock, SS 231, Kingfish, SS 234, Shad, SS 235, Whale, SS 239, Gurnard, SS 254, Hoe, SS 258, Pargo, SS 264, Puffer, SS 268, Sawfish, SS 276, Steelhead, SS 280, and Sunfish, SS 281, in 1960. Peta, SS 265, was sold in Nov. 1960. The hulk of Tinosa was employed for training in submarine salvage operations in the Hawaiian Islands. Gurnard was disposed of in 1961, and Guardfish was expended as a target in 1961.

SSX I

29 tons standard, 31 tons surface, 36 tons submerged 49½×7×7 feet Diesel. 1 shaft. B.H.P.: 30=8 to 15 (max.) kts. surface Electric motors=12 kts. submerged Displacement: Dimensions:

Machinery:

Radius:

Electric motors = 12 kg. usemerged
Over 500 miles
8 (2 officers, 6 men) maximum;
4 minimum underway crew Complement:

Built in 1954-55. In Feb. 1958 an internal explosion severed her hull into three pieces, but she was re-built by Philadelphia Naval Shipyard, and rejoined the Navy on 14 Dec. 1960 for Research Laboratory pro-ject on special tests and development. Painted orange, serving at Marine Engineering Laboratory, Annapolis,



1962, United States Navy, Official

Nuclear Midget Project
A nuclear powered midget research submarine is being Length, 60 feet. Speed: 15 knots maximum. Complement: 16. developed by the Navy and the Atomic Energy Commission. Operating depth: Over 1,000 feet.

Ex-Submarine Hunter Killer

I "Barracuda" Class

Displacement.

765 tons standard, 1,160 tons submerged
196 (0.a.)×24½×16 feet
4—21 inch

Dimensions: Tubes: Machinery:

4—21 inch
3 G.M. diesels. G.E. electic
motors. 2 shafts. S.H.P.: 1,050
=13 kts. surface and submerged
50 (5 officers and 45 men)

Complement: General

General Medium sized, "extremely quiet," and handy design specifically built for anti-submarine operations. Had letter and number instead of name until 15 Dec. 1955 when "B" name was substituted for "K" number. Originally had an ungainly prow, housing listening gear, electronic and sonar detection equipment, short hull, to make her manoeuvrable and suitable for ambushing other submarines. Carried "homing" torpedoes. By 1959 this class was considered to be wanting as hunter killer craft. They lacked speed, range and endurance.

Photographs
A photograph of Bonita appears in the 1954-55 to 1961-62 editions, photographs of Barracuda with high prow in the 1963-64 edition, a broadside view of Bass in the 1962-63 and 1963-64 editions, and a starboard quarter oblique aerial view of Bass in the 1964-65 and 1965-66 editions.

Disbosals

1965-66 editions.

Disposals

Sister boats Bass, SS 551 (ex-K 2) and Bonita, SS 552 (ex-K 3) were officially stricken from the Navy List on 1 Apr. 1965.

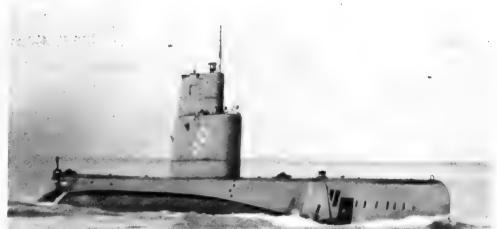
Submarines—contd

SST 3 (ex-K 1)

Builders Electric Boat Co., Groton 1 July

Laid down 1949

Launched Completed 2 Mar. 1951 10 Nov. 1951



BARRACUDA

BARRACUDA

Experimental

Bonita was used as a test ship in the 1958 Atomic Weapons Tests from which only superficial damage was

Reclassification

to SST 3; and Bass and Bonita from SSK 2 and SSK to SST 3; and Bass and Bonita from SSK 2 and SSK to SS 551 and SS 552, respectively.

2 New Construction

AGC 19

AGC 20

Displacement: Dimensions: Guns:

18,000 tons 601 × 83 feet 4—3 inch (2 twin)

General
The flagship authorised in the Fiscal Year 1965 New
Construction Programme combines a complex communications system, planning facilities and tactical control areas into one well integrated unit, and provides
the facilities for full support for the major commanders involved in the planning and execution of an amphibious assault landing. She is the first Flagship of
post Second World War design. Building by Philadelphia Naval Shipyard for delivery in Nov. 1968.
Another is in the 1966 Programme.

5 "Mount McKinley" Class Amphibious Force Flagships

	_		
AGC		Laune	hed
11 ELDORADO (ex-Monsoon)	26	Oct.	1943
12 ESTES (ex-Morning Star)		Nov.	1943
7 MOUNT McKINLEY (ex-Cyclone)	27	Sep.	1943
16 POCONO	25	Jan.	1945
17 TACONIC	10	Feb.	1945

7,510 tons light (15,295 tons full Displacement:

Dimensions: Guns:

7,510 tons light (1.5,22) (1.6 Machinery:

Boilers: Complement:

General
C2-S-AI type, but differ. Radar and radio equipment is exceptionally elaborate. Twin 40 mm. guns on extended stern instead of 5 inch, 38 cal., as formerly. Helicopter platform laid over the quarter deck. Pocono and Taconic have single mast instead of after king-post (see photograph).

Hagship Capability

Originally designated as Combined Operations Com-munications Heaoquarters Ships, these vessels are fitted as flagships for Chiefs of Combined Forces, with accom-modation for Marine and Army units attached.

Photographs

Photographs
A photograph of Mount Olympus appears in the 1952-53 to 1959-60 editions and of Eldorado in the 1962-63 to 1964-65 editions. Photographs of Mount McKinley appear in the 1961-62 to 1965-66 editions.

Disposals
Of this class Wasatch (ex-Fleetwing), AGC 9, was stricken on I Jan. 1960, Auburn, AGC 10, and Panamint, AGC 13, at the end of 1960, Adirondack, AGC 15, Mount Olympus (ex-Eclipse), AGC 8, and Teton (ex-Witch of the Wave), AGC 14, in 1961.
Of the four of the "Appalachian" class, Appalachian, AGC 1, and Catoctin, AGC 5, were stricken from the Navy List on I Mar. 1959, and Blue Ridge, AGC 2, and Rocky Mount, AGC 3, on I Jan. 1960.

The 1,730-ton yacht Williamsburg, AGC 369, (ex-PG 56, ex-Aras), used as the Presidential Yacht until the end of 1952, was in 1962 transferred to the National Science Foundation for operation by Woods Hole Oceanographic Institution,

FLAGSHIPS



POCONO

1965, United States Navy, Official



TACONIC (helicopter flight deck aft)

Added 1966, Dr. Giorgio Arra

NUCLEAR POWERED GUIDED MISSILE CRUISER (CGN)

Westinghouse

Displacement:

14,200 tons standard, 15,000 tons normal (15,947 tons full load)

Length: 7211 feet. Beam: 731 Dimensions:

No.
LONG BEACH CGN 9 (ex-CGN 160)

feet.
Draught: 32 feet
2-5 inch, 38 cal. in single mountings amidships (see Gunnery)
I twin launcher aft for "Talos" Guns:

Guided weapons:

missiles

missiles
2 twin launchers forward for
Advanced "Terrier" missiles (see
Guided Missiles)
ASROC launcher amidships, 6—
12 inch torpedo tubes on the
main deck before the bridge
(2 triple) A/S weapons:

Machinery:

Radius:

Complement:

General
Originally classified as guided missile light cruiser (CLGN). Provided under Fiscal 1957 Naval Appropriations. Designed by U.S. Navy Bureau of Ships, No. armour. To have cost \$250,000,000 including \$18,335,305 for nuclear reactors; but final cost was \$332,500,000. She commissioned on 9 Sep. 1961 and joined the Fleet late 1961. Scheduled for Pacific Fleet in 1966.

Design

The first ship to be designed and constructed from the keel up as a cruiser for the United States since the end of the Second World War, the first surface ship to be armed with a main armament of guided missiles and powered by a nuclear engineering plant, and the first nuclear powered surface fighting ship in the world.

Guided Missiles

The complex handling and launching system for "Talos" weighs over 350 tons. The system was designed to store, load, train, elevate, and launch the guided missiles, which weigh 3,000 pounds and are 31 feet long, including booster, and 30 inches in diameter.

The launching equipment automatically selects the type of missile the fire control officer chooses and delivers it to the launching station. The control system is so complex that the equipment must not only remember which missile is in which rack but must also remember any changes made in the racks themselves. The ramjet propelled "Talos" is capable of engaging both supersonic and subsonic targets and is effective against enemy planes employing air-to-surface missiles and the missiles themselves. It can deliver a high explosive or atomic warhead, as circumstances dictate.

The design of the ship included provision for an 8 missile "Polaris" !aunching system which might be installed at a later date.

installed at a later date.

Photographs

A large oblique aerial view, and a port quarter oblique aerial view, appear in the 1961-62 editions, a starboard dead broadside surface view and a starboard bow surface view in the 1962-63 edition; a starboard broadside aerial view and a port bow aerial view in the 1963-64 edition; and a starboard broadside surface view and a port oblique aerial view in the 1964-65 edition.

Drawing
Port elevation and plan.
Redrawn in 1964. Scale 128 feet = 1 inch.

Builders

Bethlehem Steel Company, Quincy

2 pressurised water cooled CI W nuclear reactors. Steam turbines. 2 shafts. S.H.P.: 80,000. Trials speed: 30.5 kts.

Cruising range, 360,000 miles at

Cruising range, 360,000 mines 22 20 kts, Allowance: 60 officers, 925 men. Accommodation for 80 officers, 1,080 men

Design

Engineers se & General Electric

Laid down 2 Dec. 1957

Launched 14 July 1959

Completed

Sep. 1961

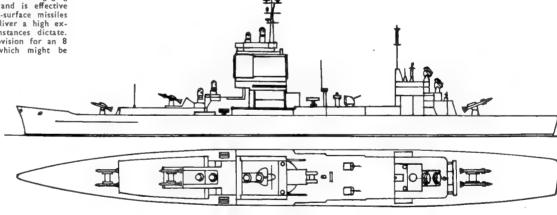
LONG BEACH

1965, United States Navy, Official

Gunnery
In 1963 the ship was fitted with two single 5-inch
guns for use against surface targets and slower aircraft.
Electronics
Modern improvements in electronic detection devices
are installed. Fitted with NTDS (Naval Tactical Data
System) at Philadelphia in 1962. Equipped with sonar.

Engineering
Westinghouse Electric Corporation constructed the reactor compartment components. General Electric Company constructed the main engines and gears, Capable of steaming continously at full power for 100,000 miles.

of steaming continuously as an experience of the six Westinghouse Electric Corporation built the six turbine generator sets, each of which has a rating of 2,500 kilowatts.





LONG BEACH (No. I "Terrier" being fired off the starboard side forward)

GUIDED MISSILE CRUISERS (CG) Fully Converted from Heavy Cruisers (CA)

3 Double-Ended and Double-Sided Type

13,700 tons standard (17,500 tons full load)
Length: 674 (o.a.) feet, Beam:
71 feet. Draught: 27 feet
2 twin launchers for "Talos"
missiles (1 forward, 1 aft):
2 twin launchers for "Tartar"
missiles (1 port, 1 starboard)
2—5 inch, 38 cal, in open
mounts each side after mack
ASROC octuple rocket launcher;
6 torpedo tubes (2 triple)
2 ASW helicopters
6" side belts, 3" decks
G.E. geared turbines. 4 shafts.
S.H.P.: 120,000–34 kts.
4 Babcock & Wilcox
Allowance: 1,010 (60 officers,
950 men). Accommodation for
85 officers, 1,120 men Displacement: 13,700 tons standard (17,500 tons Dimensions: Guided weapons: Guns: A/S weapons: Aircraft:

Machinery: Boilers: Complement:

General
Fully converted guided missile armed cruisers.
Originally Albany was one of the "Oregon City" class heavy cruisers with one funnel, while Chicago and Columbus were of the "Baltimore" heavy cruisers with two funnels, but as both classes had similar dimensions, armament and propelling machinery and all three ships were rebuilt to the same design they constitute a homogeneous new class of unique type.
Conversion
The ship were stripped down to the main hull have

The ship were stripped down to the main hull, hav-The ship were stripped down to the main hull, having been redesigned from the third deck up, and building then started afresh to the recast layout. The reconstruction consisted of the entire suppression of the old conception of armament and separate funnels and masts, and the installation of guided weapons both forward and aft and on both beams, thus giving the term "Double-ended and double-sided", with combined mast-stacks or "macks" replacing the former masts and stacks. The first conventionally powered cruisers to have all their

No. Builders Laid down Completed ALBANY CHICAGO ALBANY CG 10 (ex-CA 123) CHICAGO CG 11 (ex-CA 136) COLUMBUS CG 12 (ex- CA 74) Bethlehem Steel Co., Quincy Philadelphia Naval Shipyard Bethlehem Steel Co., Quincy 6 Mar. 1944 28 July 1943 28 June 1943 30 June 1945 20 Aug. 1944 30 Nov. 1944 15 June 1946 8 June 1945 10 jan. 1945



COLUMBUS

1964, United States Navy, Official

guns replaced by guided missile launchers (it was subsequently decided to add two 5 inch guns). They are also fitted with sonar and anti-submarine weapons. The design, included provision for an 8 missile "Polaris" launching system.

Albany was converted at Boston Naval Shipyard be-tween 2 Jan. 1959 and 3 Nov. 1962, Columbus at

Puget Sound Naval Shipyard 1 June 1959 to 1 Mar. 1963, and Chicago at San Francisco Naval Shipyard 1 July 1959 to 1 Sep. 1964 (recommissioned on 2 May 1964). Albany, converting to AAW at Boston Naval Shipyard, is being fitted with NTDS (Naval Tatical Data System). Chicago is to be fitted with NTDS and FAST (Fleet Automatic Shuttle Transfer) system.



CHICAGO

1965, United States Navy, Official



ALBANY

1963, United States Navy, Official

GUIDED MISSILE CRUISERS (CAG). Converted from Heavy Cruisers (CA)

ROSTON CANBERRA (ex-Pittsburgh) CAG 1 (ex-CA 69) CAG 2 (ex-CA 70)

Builders Bethlehem-Steel Co., Quincy Bethlehem-Steel Co., Quincy

Laid down 30 June 1941 3 Sep. 1941

Launched 26 May 1942 19 Apr. 1943

Completed 30 June 1943 14 Oct. 1943

Converted 1 Nov. 1955 15 June 1956

Single-Ended Type

2 Converted "Baltimore" Class

13,300 tons standard (17,500 tons full load)
Length: 673½ (o.a.) feet. Beam:
71 feet. Draught: 26 feet
6—8 inch 55 cal.; 10—5 inch
38 cal.; 12—3 inch, 50 cal. AA.
2 twin launchers for "Terrier" missiles (aft only)
6"side belts, 3" decks
G.E. geared turbines, 4 shafts.
S.H.P.: 120,000=34 kts.
4 Babcock & Wilcox
2,500 tons
Allowance: 1,273 (73 officers, Displacement: Dimensions: Guns:

Guided weapons:

Armour: Machinery: Boilers:

Oil fuel: 2,500 tons
Allowance: 1,273 (73 officers, 1,200 men). Accommodation for 80 officers, 1,400 men Complement:

General
The world's first guided missile cruisers and first operational combat ships capable of firing supersonic anti-aircraft guided missiles. Formerly classified as Heavy Cruisers (CA). Canberra, just before original completion, was renamed in commemoration of the heavy cruiser Canberra, of the Royal Australian Navy, which was sunk in the first Battle of Savo Island on 9 Aug. 1942.

Conversion

Conversion

Both ships were converted to Guided Missile Heavy
Cruisers (CAG) by New York Shipbuilding Corporation, Camden, New Jersey, at a cost of \$30,000,000
for the two. The after 143-ton 8 inch gun turret and
the after 5 inch twin mounting were removed and two
twin guided missile launchers mounted in "X" and "Y"
positions in their place. Both ships underwent other
drastic changes for their new role of defence against
aircraft. The superstructure was entirely remodelled to
accommodate the new weapons: One of original two
funnels was removed, radically changing the ships'
appearance,

Guided Missiles

Gulded Missiles

A supersonic anti-aircraft weapon, with a length of 27 feet and a speed of 1,500 m.p.h. the "Terrier" was designed to intercept aircraft under any weather conditions at a longer range and higher altitudes than conventional anti-aircraft guns. Stowage of the "Terrier" is below decks in two magazines, completely automatic loading devices. Each of the two twin launchers is capable of firing two "Terriers" simultaneously. Can launch four missiles in eight-tenths of a second. Two missiles per launcher every 30 seconds. Automatic loading. 144 "Terrier" missiles carried in each ship.

Modernisation

Modernisation

Both ships carry "Terrier" 1, with a 10-mile range.
Boston is to be modernised to handle newer, longerrange versions of "Terriers". It is expected that
Canberra will receive the same improvements.

Photographs
A port quarter oblique aerial view of Boston appears in the 1956-57 to 1958-59 edition, a starboard quarter surface view in the 1959-60 edition, a starboard bow oblique aerial view in the 1956-57 to 1961-62 editions, and a port broadside surface view in the 1962-63 edition. A port broadside surface view of Canberra appears in the 1958-59 to 1961-62 editions, and a starboard quarter view in the 1962-63 to 1965-66 editions. editions.

Port elevation and plan of Redrawn in 1965. Canberra. Redrawn in Scale: 128 feet=1 inch.



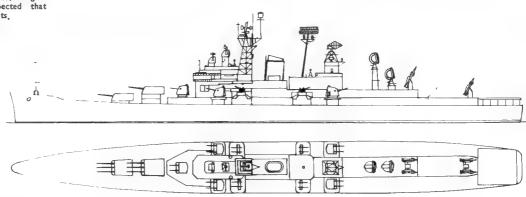
CANBERRA

1966, Aldo Fraccaroll



BOSTON

1960, courtesy Commander John C, Parry, U.S.N.R.





HEAVY **CRUISERS** (CA)

3 "Salem" Class

Displacement:

Dimensions: Guns:

Aircraft: Armour: Machinery:

17,000 tons standard (21,500 tons full load)
Length: 717 (o.a.) feet. Beam:
75‡ feet. Draught: 26 feet
9—8 inch, 55 cal., in 3 triple
turrets. 12—5 inch, 38 cal.,
d.p. in 6 twin mounts, 16—3
inch AA., 50 cal., in 8 twin
mounts, (see Gunnery)
1 helicopter
8"-6" side, 3"+2" decks
Geared turbines. 4 shafts. S.H.P.:
120.000=33 kts.
4 Babcock & Wilcox
2,600 tons
8,000 miles at 15 kts.
Allowance: 1,300 (60 officers,
1,240 men). Accommodation for
103 officers, 1,565 men Boilers: Oil fuel: Radius: Complement:

General

General

The heaviest cruisers in the world, and the first vessel to mount completely automatic rapid-fire 8-inch guns. They were an expansion of the "Oregon City" class design. Much of extra tonnage is absorbed by rapid loading gear and extra magazine space. Newport News and Salem were the first completely air-conditioned cruisers. Des Moines is not air-conditioned.

Conversion

Newport News underwent limited conversion at Nor-folk Naval Shipyard in 1961-62 at a cost of \$2,000,000 for her role as Second Fleet Flagship in the Atlantic.

Gunnery

All guns are fully automatic. Cartridge cases replaced wrapped charges. Shells have automatic fuse setting. 8-inch guns are capable of firing four times more rapidly than any previous model. There is provision for 24—3 inch AA. guns in 12 twin mountings; but the twin mountings abreast the funnel are not installed in peacetime, and the twin mountings on the forecastle have been removed from Newport News.

Builders
Bethlehem Steel Co., Quincy
Bethlehem Steel Co., Quincy
Newport News S.B. & D.D. Co. No. CA 134 CA 139 CA 148 Completed 17 Nov. 1948 9 May 1949 29 Jan. 1949 Laid down Launched DES MOINES 28 May 1945 4 June 1945 1 Oct. 1945 27 Sep. 1946 25 Mar. 1947 6 Mar. 1947 SALEM NEWPORT NEWS



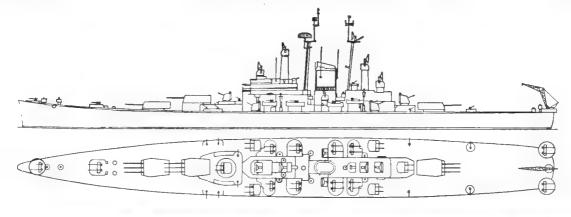
NEWPORT NEWS

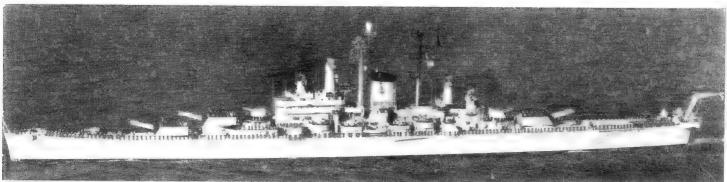
1964, United States Navy, Official

Photographs
Starboard bow view of Salem in the 1957-58 edition, broadside section view of Salem in the 1959-60 and 1960-61 editions, starboard broadside aerial view of Newport News in the 1957-68 to 1960-61 editions. starboard bow oblique aerial view of Des Moines in the 1957-58 to 1961-62 editions, and starboard bow oblique aerial view of Newport News in the 1961-62 edition.

Appearance
With single funnels, these three ships resemble the "Oregon City" class. After refit as flagship Newport News has an antennae mast on the forecastle.

Port elevation and plan. Scale: 128 feet=1 inch. The 20 mm. AA. guns shown have since been removed.





DES MOINES

1962, United States Navy, Official



Heavy Cruisers-contd.

OREGON CITY ROCHESTER

Builders Bethlehem Steel Co., Quincy Bethlehem Steel Co., Quincy

Laid down 8 Apr. 1944 29 May 1944

Launched 9 Feb. 1945 28 Aug. 1945

Completed 16 Feb. 1946 20 Dec. 1946

2 "Oregon City" Class

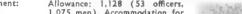
Displacement: Dimensions:

Guns:

Oregon City: 13,700 tons standard, Rochester: 13,000 tons standard (17,500 tons full load) Length: 673½ (o.a.) feet. Beam: 71 feet. Draught: 26 feet. Rochester: 9—8 inch in 3 triple turrets; 12—5 inch. 38 cal. in 6 twin mounts; 20—3 inch, 50 cal. AA. in 10 twin mounts. See Gunnery Oregon City: 9—8 inch, 55 cal., 12—5 inch, 38 cal., 52—40 mm. AA., 24—20 mm. AA. 1 helicopter

Aircraft: Armour: Machinery:

Boilers: Oil fuel: Radius: Complement: 12—S inch, 38 cal., 52—40 mm. AA., 24—20 mm. AA.
1 helicopter
6" side, 3"+2" decks
G.E. geared turbines. . 4 shafts.
S.H.P.. 120,000=33 kts.
4 Babcock & Wilcox
2,500 tons
9,000 miles at 15 kts.
Allowance: 1,128 (53 officers, 1,075 men). Accommodation for 85 officers, 1,660 men.



General

The design of these ships is a modification of that of the "Baltimore" class, with a single funnel and simplified superstructure. The bridge is father aft than in the "Baltimore" class, Oregon City retains her original armament.

Engineering

Engineering
Cruising turbines are not included in the machinery design. In the event of port or starboard fuel tanks being ruptured, the change-over of suction to the other side could be accomplished in a minute, oil burner lines being divided at the boiler face.

Gunnery
Rochester was rearmed with 3-inch, 50 cal, anti-aircraft guns in place of her former 40 mm. AA. guns
and 20 mm. AA. guns.

Class Albany, originally of this class, was converted to a guided missile cruiser at Boston Naval Shipyard between '2 Jan. 1959 and 3 Nov. 1962 (see previous page). Her classification and hull number was officially changed from CA 123 to CG 10 on 1 Nov. 1958. She recommissioned on 3 Nov. 1962.

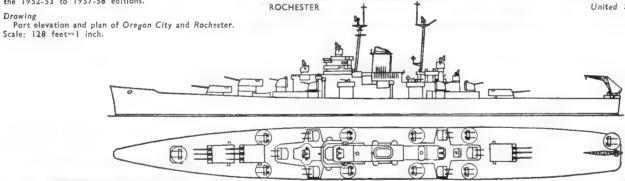
Photographs
A photograph of Albany before conversion appears in the 1952-53 to 1957-58 editions.

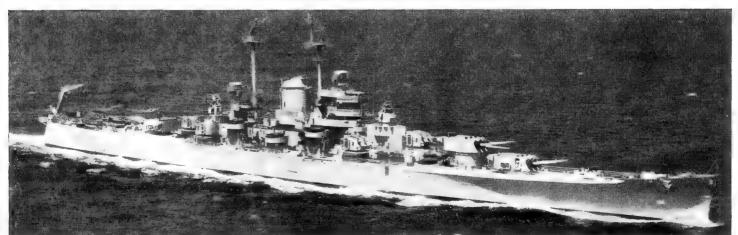
ROCHESTER





United States Navy, Official





Added 1954, U.S. Navy, Official

10 "Baltimore" Class

13,600 tons standard (17,200 tons full load)
Lenght: 673\(\frac{1}{2}\) (o.a.) feet. Beam:
71 feet. Draught: 26 feet
9—8 inch, 55 cal., 12—5 inch,
38 cal., 52—40 mm. AA.
(14—3 inch 50 cal. guns replaced 40 mm. in rearmed ships)
All ships carry a helicopter
6" side, 3"+2" decks
G.E. geared turbines, 4 shafts.
S.H.P.: 120,000—34 kts.
4 Babcock & Wilcox
2,500 tons
9,000 miles at 15 kts.
Allowance: 1,146 (61 officers,
1,085 men). Accommodation for
78 officers, 1,555 men. Varies among class
ift in 20 months. All the others Displacement: Dimensions: Guns: Aircraft: Machinery: Boilers: Oil fuel: Radius: Complement:

among class

Pittsburgh was built in 20 months. All the others except Toledo were built in two years. The last six of the original 14 ships of the class were built under the War Programme, Only one crane now at stern except in Baltimore and Quincy which have two cranes on the stern as shown in the photograph of Baltimore in the 1958-59 edition. Catapults were discarded. The classification and hull number of Fall River (CA 131 to CG 12) was officially changed to became effective on 1 Nov. 1958, but the re-classification was cancelled on 9 Oct. 1958 (Columbus was converted instead). St. Paul (First Fleet Flagship) and Helena now have a tower foremast and improved radar, see photograph.

now have a tower foremast and improved rauar, see photograph.

Gunnery

The 8-inch guns were of a new model, firing a heavier shell than those mounted in previous cruisers. Bremerton, Helena, Los Angeles, Macon, St. Paul and Toledo underwent armament conversion (improved rapid-firing twin 3 inch 50 cal. AA guns replacing 40 mm. AA

guns). Class
Of this class Boston and Canberra were converted to "single ended" guided missile cruisers, and Chicago and Columbus were fully converted to "double-ended and double-sided" guided missile cruisers, see previous pages.

Four of the above ships were originally allocated other names:—Helena (ex-Des Moines), Pittsburg (ex-Albany), Quincy (ex-St. Paul) and St. Paul (ex-Rochester).

Rochester).

Photographs

A photograph of a "Regulus" guided missile being launched from Hefena, and a port broadside view of Macon appear in the 1957-58 edition, a port quarter view of Baltimore in the 1954-55 to 1958-59 editions. a larger starboard broadside view of Los Angeles in the 1958-59 to 1960-61 editions, a port bow oblique elevated view of Helena in the 1957-58 to 1960-61 editions, a port quarter view of St. Paul in the 1959-60 and 1960-61 editions, a starboad broadside surface view of St. Paul with tower foremast and improved radar in the 1961-62 to 1965-66 editions.

Drawing
Port elevation and
Scale: 128 feet=1 inch.
Disposals and plan.

Disposals

The heavy cruisers Augusta,
CA 31, Chester, CA 27 and
Louisville, CA 28, of the
"Chester" class; Portland, CA
33; New Orleans, CA 32, Minneapolis. CA 36, Tuscaloosa,
CA 37 and San Francisco, CA
38, of the "New Orleans" class;
and Wichita, CA 45, were
scrapped in 1959 (stricken
from the Navy List on I Mar.
1959).

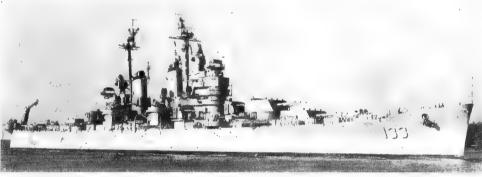
Heavy Cruisers-continued

	No.	Builders	Laid down	Launched	Completed
BALTIMORE	CA 68	Bethlehem Steel Company, Quincy	26 May 1941	28 July 1942	15 Apr. 1943
QUINCY	CA 71	Bethlehem Steel Company, Quincy	9 Oct. 1941	23 June 1943	15 Dec. 1943
PITTSBURG	CA 72	Bethlehem Steel Company, Quincy	3 Feb. 1943	22 Feb. 1944	10 Oct. 1944
ST. PAUL	CA 73	Bethlehem Steel Company, Quincy	3 Feb. 1943	16 Sep. 1944	17 Feb. 1945
HELENA	CA 75	Bethlehem Steel Company, Quincy	9 Sep. 1943	28 Apr. 1945	4 Sep. 1945
BREMERTON	CA 130	New York Shipbuilding Corporation	1 Feb. 1943	2 July 1944	29 Apr. 1945
FALL RIVER	CA 131	New York Shipbuilding Corporation	12 Apr. 1943	13 Aug. 1944	1 July 1945
MACON	CA 132	New York Shipbuilding Corporation	14 June 1943	15 Oct. 1944	26 Aug. 1945
TOLEDO	CA 133	New York Shipbuilding Corporation	13 Sep. 1943	6 May 1945	27 Oct. 1946
LOS ANGELES	CA 135	Philadelphia Naval Shipyard	28 July 1943	20 Aug. 1944	22 July 1945

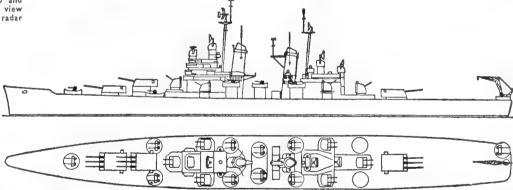


HELENA

1961, United States Navy, Official



Added 1963, United States Navy, Official TOLEDO





2 "Worcester" Class

14,700 tons standard (18,500 tons full load)
Length: 688 (w.l.), 679½ (o.a.)
feet. Beam: 70½ feet. Draught: 75 feet. Displacement: Dimensions:

Guns:

Aircraft:

1 helicopter 6"—3" side, 4" turrets, 3"+2" decks Machinery:

Boilers: Oil fuel: Radius:

decks
G.E. geared turbines, 4 shafts.
S.H.P.: 120,000=32 kts.
4 Babcock & Wilcox
3,300 tons
12,000 miles at 15 kts.
Allowance: 995 (55 officers, 940 men). Accommodation for 70 officers, 1,286 men Complement:

Both ordered on 15 June 1943. Transferred from the Atlantic Fleet to the Pacific Fleet in 1955-56. These ships, which are larger than most heavy cruisers, were nevertheless rated as light cruisers by Treaty definitions, Both in the Pacific Reserve Fleet.

Gunnery

The 6 inch dual purpose guns of a semi-automatic model were mounted in six twin turrets. The 3 inch rapid fire guns were disposed in eleven twin mounts and two single mounts.

Two incomplete sister ships, Vallejo (146) and Gary (147) were cancelled on 11 Aug. 1945. Six additional ships. CL 154-159, were cancelled in 1945.

Photographs
A starboard quarter view of Worcester appears in the 1957-58 edition, a port bow oblique aerial view in the 1959-60 edition, and a starboard broadside view in the 1957-58 to 1962-63 editions.
A large starboard bow surface view of Roanoke appears in the 1957-58 edition, and a port dead broadside aerial view in the 1958-69 to 1965-66 editions.

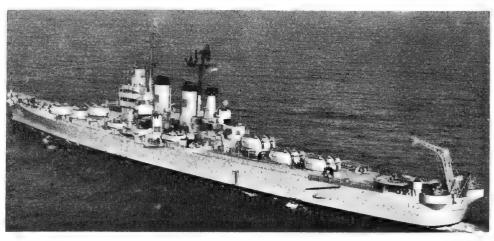
Displacement: Dimensions:

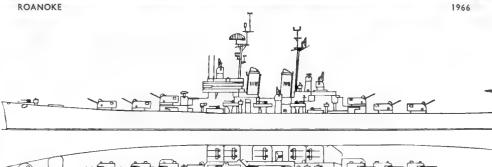
Guns:

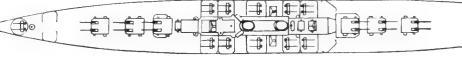
Drawing Port elevation and plan. Scale: 128 feet=1 inch.

CRUISERS (CL)

Builders New York Shipbuilding Corpn New York Shipbuilding Corpn No. CL 145 CL 144 Laid down 15 May 1945 29 Jan. 1945 ROANOKE WORCESTER







Laid down

23 Aug. 1943

No.: CL 106 New York Shipbuilding Corpn. **FARGO** I "Fargo" Class

10,500 tons standard (14,055 tons full load) Length: 600 (w.l.), 610 (o.a.) feet.

Builders

feet.
Beam: 66 feet. Draught: 25 feet
12—6 inch, 47 cal., 12—5 inch,
38 cal., d.p., 24—40 mm, AA.,
19—20 mm. AA.,
3 seaplanes (originally carried)

Aircraft: Catabults: Armour:

2 5"—1½" side, 5"—3" gunhouses, 3"+2" decks G.E. geared turbines. 4 shafts. S.H.P.: 100,000=32.5 kts. 4 Babcock & Wilcox 2,500 tons 9,500 miles at 15 kts. Allowance: 925 (55 officers, 870 men) Accommodation for 70 Machinery: Boilers: Oil fuel: Radius:

Complement: men), Accommodation for 70 officers, 1,286 men

General General

A modifiel version of the "Cleveland" type with single funnel and simplified superstructure to enlarge the area of fire of the anti-aircraft armament. In the Atlantic Reserve Fleet,

1 F

Photographs Photographs
A large starboard bow oblique aerial view of Fargo appears in the 1958-59 and earlier editions, and starboard broadside aerial and starboard bow aerial views of Huntington in the 1959-60 edition. Drawing Port elevation and plan. Scale: 128 feet=! inch. Disposal
Sister ship Huntington was stricken from the Navy
List on 1 Sep. 1961.

Launched

25 Feb. 1945

Launched

16 June 1947 4 Feb. 1947

Completed

4 Apr. 1948 25 June 1948

Completed

9 Dec. 1945



GUIDED MISSILE CRUISERS (CLG). Conversion from Cruisers (CL)

		No.	
GALVESTON	CLG 3	(ex-CL	93)
LITTLE ROCK	CLG 4	(ex-CL	92)
OKLAHOMA CITY	CLG 5	(ex-CL	91)
PROVIDENCE	CLG 6	(ex-CL	82)
SPRINGFIELD	CLG 7	(ex-CL	66)
TOPEKA	CYG 8	(ex-CL	67)

Single-Ended Type

6 Converted "Cleveland" Class

Displacement:	10,670 tons standard (14,600 tons full load)
Dimensions:	Length: 600 (w.l.), 610 (o.a.) feet,
Guns:	Beam: 66 feet. Draught: 25 feet Galveston, Topeka: 6-6 inch, 47 cal. (2 triple); 6-5 inch, 38 cal. d.p. (3 twin) Little Rock, Oklahoma City, Providence, Springfield: 3-6 inch, 47 cal (triple); 2-5
Guided weapons:	inch, 38 cal. d.p. (twin) Galveston, Little Rock, Okla- homa City; 1 "Talos" twin launcher aft, with 46 missiles. Providence, Springfield, Topeka: 1 "Terrier" twin launcher aft
Armour:	with 120 missiles. 5" belt, 5" decks, 5"—3" gun-

G.E. geared turbines, 4 S.H.P.: 100,000=33 kts. 4 Babcock & Wilcox Machinery: 4 shafts. Boilers: 4 Babcock & Wilcox
2,100 tons
7,500 miles at 15 kts.
"Galveston" class. Allowance:
1,077 (67 officers, 1,010 men).
Accommodation for 125 officers,
1,270 men.
"Providence" class. Allowance: Oil fuel: Radius: Complement:

1,012 (67 officers, 945 men). Accommodation for 70 officers, 2,000 men. Varies among class

General

General

These six former cruisers of the "Cleveland" class (CL) were converted into guided missile cruisers (CLG), Galveston under the 1956 Fiscal Year Programme and the other five under the 1957. They have conventional armament forward, and amidships, and guided missile launchers aft, three being armed with "Terrier" missiles and three with "Talos" missiles. Other work, including improvement of habitability, was also done in conjunction with the installation of missile capabilities.

conjunction with the installation or missile capabilities. Flagships
Little Rock., Oklahoma City, Providence and Springfield were refitted as flagships, the navigating bridge
and forward superstructure being reconstructed to provide for flag spaces. Springfield became 6th Fleet
flagship on 14 Dec. 1960. Oklahoma City became 7th
Fleet flagship on 1 July 1964, replacing Providence
as such. Little Rock was 2nd Fleet flagship Oct. 1961
to 1962, and again later until Jan. 1966.
Guided Missiles

to 1962, and again later until Jan. 1966. Guided Missiles
The "Talos" ramjet-powered surface-to-air missile,
the principal armament in the Galveston, has a
range of more than 65 miles and is able to carry a
nuclear warhead. See full notes under Long Beach on
a previous page.
Conversion

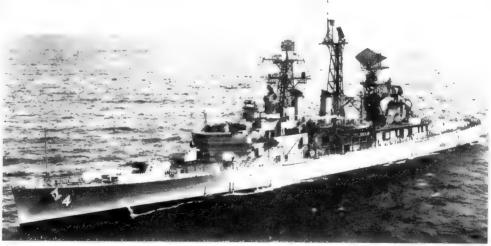
a previous page. Conversion
Galveston was converted at Philadelphia Naval Shipyard. She was reclassified CLG 93 on 4 Feb. 1956, and CLG 3 on 23 May 1957. Conversion began on 15 Aug. 1956 and was completed on 5 Sep. 1958. Topeka was converted at New York Naval Shipyard; Oklahoma City at Bethlehem Pacific Coasts Steel Corp., San Francisco, Calif.; Little Rock at New York Shipbuilding Corp., Camden, N.J.: and Providence at Boston Naval Shipyard, Providence began conversion on 1 June 1957, and completed on 30 Sep. 1959. Topeka began conversion on 19 Aug. 1957 and completed on 26 Mar. 1960. Little Rock began conversion on 3 Jan. 1957 and commissioned on 3 June 1960. Oklahoma City began conversion on 21 May 1957 and commissioned on 7 Sep. 1960. Springfield began conversion on 1 Aug. 1957 at Bethlehem Steel Co., Quincy, Mass. but was moved to Boston Naval Shipyard on 22 Mar. 1960 for completion on 2 July 1960.





OKLAMOMA CITY

1965, United States Navy, Official

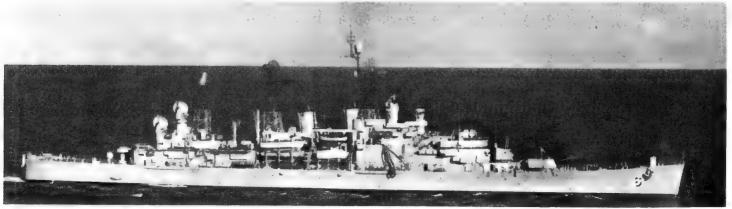


LITTLE ROCK (now has new range and height finding radar)

Photographs

Port broadside and starboard bow views of Galveston and a starboard bow view of Providence (Addenda) appear in the 1959-60 edition, a port broadside aerial view of Little Rock in the 1960-61 to 1963-64 editions, a starboard quarter aerial view of Galveston in the 1959-60 to 1964-65 editions, a port oblique

surface view of Oklahoma City in the 1961-62 to 1964-65 editions, a starboard bow surface view of Providence in the 1960-61 to 1965-66 editions, a starboard bow oblique aerial view of Topeka and a port dead broadside surface view of Springfield in the 1961-62 to 1965-66 editions.



PROVIDENCE

1966, United States Navy, Official

Cruisers-contd.

No.		
CL 103		
CL 104 (!X-304)		
CL 65		
CL 90		
CL 101		
CL 102		

Cruisers (CL)

6 "Cleveland" Class

Displacement:	10,500 tons standard (13,755
	tons full load)
Dimensions:	Length: 600 (w.l.), 610 (o.a.)
	feet.
	Beam: 66 feet. Draught: 25 feet
Guns:	12-6 inch, 47 cal., 12-5 inch.
	38 cal. (d.p.), 24 to 28-40
	mm, AA., 19-20 mm, AA.
Armour;	5"-1+" side, 3"+2" decks, 5"
	-3" gunhouses
Machinery:	G.E. geared turbines. 4 shafts.
	S.H.P.: 100,000=33 kts.
Boilers:	4 Babcock & Wilcox
Oil fuel:	2,100 tons
Range:	7,500 miles at 15 kts.
Complement:	Allowance: 924 (54 officers, 870
	men). Accommodation for 70
	officers, 1,285 men

officers, 1,285 men

General

With 36 units (excluding Youngstown, CL 94, carrelled on 11 Aug. 1945 when 55 per cent complete), this was numerically the largest group of cruisers of a single design ever put in hand. 27 were completed as cruisers, but nine originally ordered from New York Shipbuilding Corporation were converted into aircraft carriers of the "Independence" class, All the survivors of the "Cleveland "class (which originally carried 3 aircraft launched from two catapults) are out of commission except those converted into guided missile cruisers. (See names of stricken ships of this class under Disposals below.)

Appearance

The first seven ships (CL 55, 56, 57, 58, 60, 62, 63)

The first seven ships (CL 55, 56, 57, 58, 60, 62, 63) had round bridge fronts. The remaining six cruisers of this class have a rectangular pilot house with a walk around the front.

around the front.

Class
Galveston, Little Rock, Oklahoma City, Providence, Springfield and Topeka of this class were converted into guided missile light cruisers (see previous page). Photographs
A starboard aerial view of Birmingham, a port bow view of Oklahoma City and four photographs of 'Terrier'' guided missiles appear in the 1957-58 edition, a port bow view of Manchester in the 1958-59 and earlier editions, a photograph of a "Talos" missile on its launcher in the Addenda of the 1958-59 edition, and a larger port broadside view of Manchester in the 1959-60 and 1960-61 editions.

Reclassification

CLG 93 and CLs 92, 91, 82, 66 and 67 were reclassified as CLCs 3, 4, 5, 6, 7 and 8, respectively on 23 May 1957. (See previous page).

Conversion
In addition to those marked CLG It was originally

Conversion
In addition to those marked CLG it was originally intended that Vincennes (CL 64), Astoria (CL 90), Amsterdam (CL 101) and Atlanta (CL 104) would eventually be converted to guided missile cruisers (CLG). Action was postponed on the conversion of a guided missile cruiser under the 1960 conversion programme, and it is now doubtful whether any other guided missile conversions will be undertaken in view of the problems involved.

of the problems involved.

Nomenclature

Two of the above ships were originally allocated other names:

Astoria (ex-Wilkes-Barre) and Vincennes (ex-

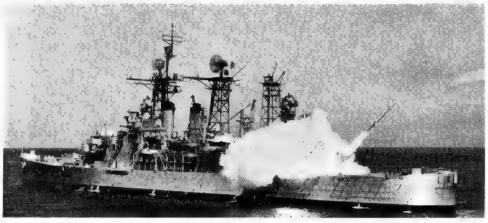
names:— Astoria (commission of Filint).

Drawing
Port elevation and plan of original "Cleveland" class.

Scale: 128 feet=1 inch.

Disposals
Of the "Cleveland" class, Birmingham, C.L. 62, Cleveland, CL 55, Columbia, CL 56, Denver, CL 58, Houston, CL 81, Mobile, CL 63, Montpelier, CL 57 and Santa Fe, CL 60, were scrapped in 1959 (stricken from the Navy List on 1 Mar. 1959). Duluth, CL 87

Builders Laid down Launched Combleted Compi 1 July 3 Dec. 8 June 17 May 8 Jan. New York S.B. Corpn.
New York S.B. Corpn.
Bethlehem Co., Quincy
Cramp Shipbuilding Co.
Newport News S.B. & D.D.
Newport News S.B. & D.D. Laid down 14 Dec. 1942 25 Jan. 1943 6 Feb. 1943 6 Sep. 1941 3 Mar. 1943 24 Dec. 1943 6 Feb. 1944 28 Dec. 1943 6 Mar. 25 Apr. 20 Sep. 1943 1944



SPRINGFIELD (see previous page) firing "Terrier missile

1966, United States Navy, Official



GALVESTON (see previous page) 1965, United States Navy, Official 40) $\exists i$

was stricken on 1 Jan. 1960 and Manchester, CL 83, at the end of 1960, Bilox1, CL 80, Dayton, CL 105, and Miami, CL 89, were stricken on 1 Sep. 1961. Atlanta, CL 104, and Vicksburg, CL 86, were stricken

on 1 Oct. 1962, but Atlanta was reinstated as IX-304 on 15 May 1964 to be used in support of Pacific experiments, see photograph on next page. Vincennes, CL 64, was stricken on 1 Apr. 1966.



TOPEKA (see previous page)

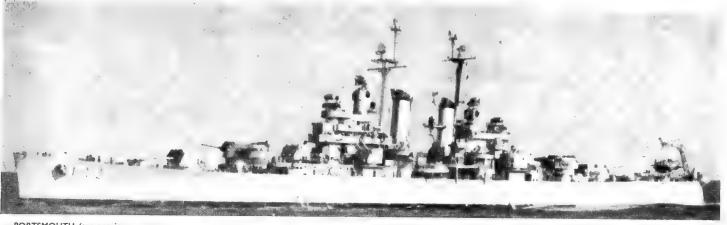
1966, United States Navy, Official

Cruisers-contd.



ATLANTA (see previous page)

1965, United States Navy, Official



PORTSMOUTH (see previous page

United States Navy, Official

LIGHT CRUISERS (CLAA) ANTI-AIRCRAFT

2 "Juneau" Class

Displacement: Dimensions:

Guns:

Armour: Machinery:

6,000 tons standard (8,200 tons full load)
Length: 541 feet. Beam: 53 feet,
Draught: 25 feet
12—5 inch, 38 cal. (d.p.), 24 to
32—40 mm. A.A.
3½" side, 2" deck
Westinghouse geared turbines.
2 shafts, S.H.P.: 75,000=32 kts.
4 Babcock & Wilcox
1,450 tons
7,500 miles at 15 kts.
579 (Accommodation for 63 officers, 785 men) Boilers: Oil fuel: Radius: Complement:

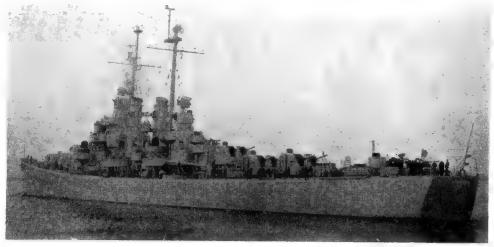
General

Originally rated as light cruisers (CL), later as anti-aircrait cruisers (CLAA). The bridges are armoured. Conversion

Spokane is undergoing major conversion to adapt her as Sonar Test Ship, Bow to be rebuilt. Reclassified T-AG 191 on 1 Apr. 1966. Scheduled for service in Nov. 1967.

1967.
Gunnery
In Spokane and Fnesno (see drawings in the 1964-65 and earlier editions), "B" and "X" turrets were placed a deck lower than in earlier ships and the torpedo tubes were omitted to improve stability.
Torpedo Tubes
The 8—21 inch torpedo tubes in quadruple deck mountings were removed from Flint and Tucson.

TUCSON SPOKANE No. CLAA 98 CLAA 120 Laid down
23 Dec. 1942 3 Sep. 1944
15 Nov. 1944 22 Sep. 1945 Builders
Bethlehem Steel Co., S. Francisco
Federal S.B. & D.D. Co., Kearny Completed 3 Feb. 1945 17 May 1946



United States Navy, Official

Disposals
Of this class, San Diego, CLAA 53, San Juan, CLAA 54, Oakland, CLAA 95 and Reno, CLAA 96, were

stricken on 1 Mar. 1959, Juneau on 1 Nov. 1959. Fresno, CLAA 121, on 1 Apr. 1965, Flint, CLAA 97. on 1 Sep. 1965.



SPOKANE (now being rebuilt as Sonar Test Ship)

Added 1965, United States Navy, Official

NUCLEAR POWERED GUIDED MISSILE ARMED DESTROYER LEADERS (DLGN)

TRUXTUN

No.: DLGN 35

Builders: New York Shipbuilding Corpn., Laid down: 17 June 1963

Launched: 19 Dec, 1964

Combletion: Nov. 1966 (estimated)

Officially Rated as Nuclear Powered Guided Missile Frigates (DLGN)

I + 1 New Construction

Displacement: Dimensions:

8,200 tons standard (9,000 tons

full load) Length: 564 feet, Beam: 58 feet.

Draught: 26 feet
1 twin launcher for "Terrier" Guided weapons:

surface-to-air missiles
1—5 inch, 54 cal. forward
4—3 inch, 50 cal. (2 twin)

A/S weapons: Machinery:

Combined "Terrier" ASROC launcher aft, torpedo tubes, DASH 2 nuclear reactors. Geared tur-

Complement:

bines. 2 shafts 27 officers, 452 men. Acommoda-tion for 31 officers, 465 men

General
This ship was requested in the Fiscal Year 1962 Shipbuilding Programme. The contract was awarded to the New York Shipbuilding Corporation, Camden, N.J. in June 1962. Estimated final cost \$134,900,000. To be similar to Bainbridge but with some major equipment improvements, helicopter landing platform and hangar, and bow mounted long range sonar. Navy Tactical Data System, and 3 co-ordinate radar. The six torpedo tubes in two triple nests are of 12 inch diameter and are essentially anti-submarine weapons.

Was originally scheduled to have been commisioned for service in Mar, 1966 (official estimate), and to have been deployed in the Pacific Fleet in 1966. Another nuclear powered guided missile frigate was requested in the Fiscal Year 1966 New Construction Programme.

Rescindment

Guns:

Rescindment

The nuclear powered guided missile frigate (DLGN) requested in the Fiscal Year 1963 New Construction Programme was not authorised because the "Typhon" system was not available, and there are no longer plans for this particular design of DLGN, since the "Typhon" project has been cancelled as being too large and complex for full reliability. The ship would have been the

largest vessel in the broad, and now practiclly merging, destroyer-frigate category ever designed. She would have had a full load displacement of well over 9,000 tons with an overall length exceeding 600 feet and armed with a twin launcher for long range "Typhon" missiles, two single launchers for short range "Typhon" system missiles, giving her long range and medium range

surface-to-air, surface-to-surface, and surface-to missile capability; two triple tube anti submarine torpedo launchers. ASROC and DASH, two 5-inch dual purpose singly mounted guns, long range sonar, homing and wire-guided torpedoes, and NTDS (Naval Tactical Data System). An official United States Navy artist's impression of this project appeared in the 1962-63 edition.

Officially rated as Nuclear Powered

Guided Missile Frigate (DLGN)

Displacement:

7,600 tons standard (8,430 tons

Dimensions:

7,600 tons standing full load)
Length: 540 (pp.), 550 (w.l.),
544 (o.a.) feet. Beam: 56 Length: 540 (pp.), 550 (w.l.), 564 (o.a.) feet. Beam: 56 (w.l.), 57½ (max.) feet. Draught: 26 feet 2 twin launchers for Advanced "Terrier" surface-to-air missiles

Guided weapons:

"Terrier" surface-to-air missiles mounted fore and aft
4-3 inch 50 cal. AA. (2 twin)

Guns:

A/S weapons:

Machinery:

4—3 Inch amidships ASROC launcher forward; 6 tor-pedo tubes (2 triple) 2 pressurised water cooled DIG nuclear reactors. Geared tur-

2 shafts. S.H.P.: Over 60,000 = over 30 kts.

Radius: Complement:

See Engineering
Allowance: 451 (26 officers, 425 men). Accommodation for 34 officers, 465 men

General
Provided under the Fiscal Year 1959 new construction programme. First nuclear powered warship of the destroyer type ever built in the world. \$35,000,000 appropriated for the nuclear power plant and \$10,000,000 for early work on design and hull. Final cost \$163,200,000. (\$87,000,000 was paid to the builders, Bethlehem Steel. The remainder was for Government furnished material.) The design light displacement was 6,500 tons. She was delivered to the Navy in Nov. 1962. In addition to her guided missiles she carries anti-submarine weapons and conventional armament. She mounts all the weapons and equipment of the conventionally powered guided missile frigates in a slightly bigger hull. She is bigger than the light cruisers of the "juneau" class. Allocated to the Pacific Fleet in Oct. 1965.

the Pacific Fleet in Oct. 1965. Engineering
The nuclear power plant was build by the General Electric Co., West Milton, N.Y. The ship has a much greater cruising range at sustained high speeds than conventionally powered frigates. She is capable of steaming 150,000 miles at full power continously, or more than 400,000 miles at 20 kts. continuously. The use of nuclear propulsion gives her many advantages. Some of these are the tactical flexibility of steaming at high speeds for long period of time without the necessity for refuelling and the elimination of

BAINBRIDGE

No.: Builders:
DLGN 25 Bethlehem Steel Co., Quincy,

Laid down: 15 May 1959

Launched: 15 Apr. 1961

Commissioned: 6 Oct. 1962



BAINBRIDGE

1963, United States Navy, Official

smoke stacks and air intakes for blowers (fans), providing greater protection for personnel against the danger of atomic fall-out. Also the elimination of smoke stacks permits the use of better radar and communication antennae located for optimum performance and free from the deteriorating effects of stack fumes.

Guided Missiles

The ship carries, or has a capacity of, 80 guided missiles,
Nomenclature

Named after Commodore William Bainbridge, hero of the Tripoli War and the War of 1812.



GUIDED MISSILE ARMED DESTROYER LEADERS (DLG)

Officially Rated as

Guided Missile Frigates

9 "Belknap" Class

6,570 tons standard (7,930 tons Displacement:

full load)
Length: 547 feet. Beam: 544 feet. Dimensions:

Guided weapons:

Draught: 19½ feet
Twin Terrier/ASROC dual
launcher forward (for missiles
and A/S rockets) Guns:

and A/3 rockets)
1—5 inch, 54 cal. aft; 2—3
inch, 50 cal. (single) amidships
ASROC launcher; 6 torpedo
tubes (2 triple)
Geared turbines. 2 shafts. A/S weapons:

Machinery: Geared turbines. 2 S.H.P.: 85,000=34 kts. Boilers:

Allowance: 395 (22 officers, 373 men). Accommodation for 420 (31 officers, 389 men) Complement:

General

General
Provided for under the Fiscal Year 1961 (first three)
and 1962 (other six) building programmes. Helicopter
platform aft. Anti-submarine warfare helicopters, and
long range radar and sonar. Fitted with NTDS.
Engineering
All these ships are conventionally powered. The
boilers work at steam conditions of 1,200 lbs. per
sq. in. pressure and a temperature of 970 deg. F, of
superheat.
Sonar

Belknap has SQS-26 sonar similar to that in the new nuclear powered guided missile frigate Truxtun.

No.
DLG 26
DLG 27
DLG 28
DLG 29
DLG 30
DLG 31
DLG 32
DLG 33
DLG 33 Builders
Bath Iron Works Corp.,
Bath Iron Works Corp.,
Bath Iron Works Corp.,
Puget Sound Naval Yard,
San Francisco Naval Yard
Puget Sound Naval Yard,
Bath Iron Works Corp.,
Todd Shipyard Corp.,
Bath Iron Works Corp., Completed 7 Nov. 196 8 May 196 BELKNAP 5 Feb. 23 Apr. 2 July 25 Sep. 12 Dec. 20 July Dec. 1964 JOSEPHUS DANIELS WAINWRIGHT JOUETT 1962 25 1963 8 May 8 jan. 3 Dec. 15 Apr. 1 Apr. 16 July 28 May 24 Dec. 1962 1962 1962 1962 1963 1964 1964 1964 1964 1964 1964 2 25 12 25 Apr. June Oct. 1966 1966 1967 1967 30 30 30 19 HORNE STERETT WILLIAM H. STANDLEY Sep. june Dec. Nov. July 29 July 15 Jan. 9 Dec. 1966 1966 BIDDLE



BELKNAP

1965, United States Navy, Official

9 "Leahy" Class

5,670 tons standard, 6,350 tons trials (7,000 tons full load) Length: 533 (o.a.) feet. Beam: 53½ feet. Draught: 19 feet 2 twin launchers for "Terrier" surface-to-air missiles mounted fore and aft 4—3 inch, 50 cal. AA, (2 twin) ASROC launcher; 6 torpedo tubes (2 triple) Geared turbines (see Enginnering), 2 shafts. S.H.P.: 85,000=34 kts. 4 (see Engineering) Allowance: 372 (22 officers, 350 men). Accommodation for 31 officers, 365 men Displacement: Dimensions: Guided weapons:

Guns: A/S weapons:

Machinery:

Boilers: Complement:

General
Very large guided missile destroyer leaders or frigates approaching the light cruiser category. The design is an improvement on that of the "Coontx" class. DLG 16, DLG 17 and DLG 18 were provided for under the Fiscal Year 1958 Programme and DLG 19, DLG 20, DLG 21, DLG 22, DLG 23 and DLG 24 under the Fiscal Year 1959 Programme. Halsey and Reeves are of a different scheme. Fitted with the Naval Tactical Data System (NTD5).

Construction

These nine guided missile frigates were a new class with Leahy as the prototype. They are larger than the "Coontz" class and mount "Terrier" launchers fore and aft, also conventional weapons, and carry long range sonar and long and short range anti-submarine weapons. All are conventionally powered. They have "macks" in place of masts and stacks.

Engineering Engineering
Halsey and Reeves have two sets of Allis-ChalmersFalk geared turbines, Leahy, Harry E. Yarnell, Worden
and Dale have General Electric, and Richmond K.
Turner, Gridley and England have De Laval.
DLG 16 to 18 have Babcock & Wilcox boilers, and
DLG 19 to 24 have Foster-Wheeler.

Photographs

A port bow view of Leahy appears in the 1962-63 to 1964-65 editions, and a starboard bow view in the 1963-64 and editions, a port bow view of Harry E. Yarnell in the 1963-64 to 1965-66 editions.

	No.	Builders	Laid down	Launched	Completed
LEAHY	DLG 16	Bath Iron Works Corp.	3 Dec. 1959	1 July 1961	4 Aug. 1962
HARRY E. YARNELL	DLG 17	Bath Iron Works Corp.	31 May 1960	9 Dec. 1961	2 Feb. 1963
WORDEN	DLG 18	Bath Iron Works Corp.	19 Sep. 1960	2 June 1962	3 Aug. 1963
DALE		New York S.B. Corp.	6 Sep. 1960	28 July 1962	
RICHMOND K. TURNER		New York S.B. Corp.	9 Jan. 1961	6 Apr. 1963	28 May 1964
GRIDLEY	DLG 21	Puget Sound B. & D. Co.	15 July 1960	31 July 1961	25 May 1963
ENGLAND		Todd Shipyards Corp.	4 Oct. 1960	6 Mar. 1962	7 Dec. 1963
HALSEY	DLG 23	San Francisco Naval Yard	26 Aug. 1960	15 jan. 1962	20 July 1963
REEVES	DLG 24	Puget Sound Naval Yard	1 july 1960	12 May 1962	



LEAHY

1966, direct from Commanding Officer, U.S.S Leahy

Conversion Leahy was converted to AAW under the 1966 pro- gramme (three dimensional search radars, NTDS)



Guided Missile Armed Destroyer Leaders-contd.

Officially Rated as

Guided Missile Frigates (DLG)-contd.

10 "Coontz" Class

4.700 tons standard, (5,600 tons full load) Length: 512½ (w.l.), 520 (o.a.) feet Beam: 52½ feet, Draught: 20 feet
1—5 inch, 54 cal, d.p. forward; 4—3 inch, 50 cal. in 2 twin mounts amidships
One twin launcher aft for advanced "Terrier" missiles ("Terrier III"), 40 missiles carried ASROC 8-tube "Pepperbox" launcher, 6 fixed torpedo launchers in 2 triple nests. 2 geared turbines. 2 shafts. S.H.P.: 85,000=34 kts. (see Engineering)
4 (1,200 ibs, pressure)
Allowance: 355 (20 officers, 335 men). Accommodation for 28 officers, 350 men Displacement: Dimensions: Guns:

Guided weapons:

A/S weapons Machinery:

Boilers: Complement:

General
Guided missile ships of the destroyer leader or large frigate category, Improved versions of the original destroyer leaders (afterwards re-rated as frigates) of the "Mitscher" type. Designed to destroy air targets, These ships also have anti-submarine and early warning capabilities. They were intended primarily as anti-aircraft and anti-submarine warfare ships. They can also screen high speed task forces, support amphibious operations and are capable of operating independently. The light displacement was officially stated to be 3,900 tons. Dewey was the first ship equipped with the dvanced "Terrier" missile, which supersedes the original "Terrier" which has been in service in the Fleet since Jam. 1956. Coontz, Farragut, King Luce, Macdonough and Mahan were provided for under the Fiscal Year 1956 programme appropriations; Dahlgren, William V. Pratt, Dewey and Preble were provided for under the 1957 Fiscal Year programme appropriations, DLG 7, the ship which it was originally announced would be named Dewey, was renamed Luce in 1957 Cost-\$51,000,000 each, King and Mahan are equipped with NTDS (Navy Tactical Data System).

Engineering
Coontz, King, Mahan, Dahlgren, William V. Prott
and Dewey have two sets of Allis-Chalmers-Falk geared
turbines of high speed and light weight working at
a pressure of 1,200 lbs. per sq. inch and a temperature of 970 degrees Fahrenheit with superheated steam
and developing 85,000 shaft horse power. Farragut,
Luce, Macdonough, and Preble have De Laval turbines
of 85,000 S.H.P.

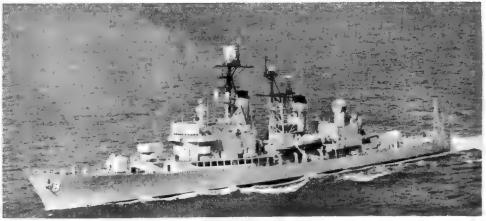
Conversion

Farragut was converted to AAW under the 1966 programme and fitted with NTDS during the overhaul at Norfolk Naval Shipyard.

Nomenclature
The name originally allocated to Luce was Dewey.

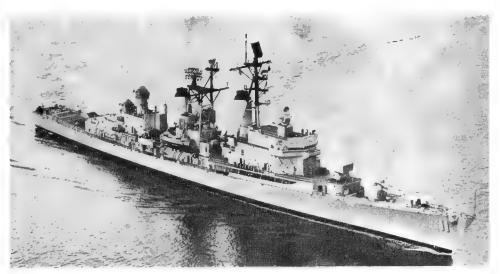
Photographs
A starboard broadside view of Dewey appears in the 1960-61 to 1963-64 editions, a starboard bow oblique view of King in the 1961-62, 1962-63 and 1964-65 editions, a starboard bow view of Dahlgren in the 1963-64 and 1964-65 editions, a starboard quarter oblique aerial view of Preble (showing "Terriers" aft, in "Y" position) in the 1961-62 to 1965-66 editions.

	No.	Builders	Laid down	Launched	Completed
FARRAGUT	DLG 6	Bethlehem Co., Quincy	3 June 1957	18 July 1958	17 Feb. 1961
LUCE	DLG 7	Bethlehem Co., Quincy	1 Oct 1957	11 Dec. 1958	15 July 1961
MACDONOUGH	DLG 8	Bethlehem Co., Quincy	15 Apr. 1958	9 July 1959	12 jan. 1962
COONTZ	DLG 9	Puget Sound Naval Yard	2 Mar. 1957	6 Dec. 1958	15 July 1960
KING	DLG 10	Puget Sound Naval Yard	2 Mar. 1957	6 Dec. 1958	17 Nov. 1960
MAHAN	DLG 11	San Francisco Naval Yard	29 July 1957	7 Oct. 1959	28 Nov. 1960
DAHLGREN	DLG 12	Philadelphia Naval Yard	1 Mar. 1958	16 Mar. 1960	15 July 1961
WILLIAM V. PRATT	DLG 13	Philadelphia Naval Yard	1 Mar. 1958	16 Mar, 1960	30 Dec. 1961
DEWEY	DLG 14	Bath Iron Works, Maine	10 Aug. 1957	30 Nov 1958	7 Dec. 1959
PREBLE	DLG 15	Bath Iron Works, Maine	16 Dec. 1957	23 May 1959	9 May 1960



MACDONOUGH

1966, United States Navy, Official



MAHAN

1965, United States Navy, Official



DAHLGREN

1965, Captain Aido Fraccoroli

GUIDED MISSILE ARMED DESTROYERS (DDG)

23 "Charles F. Adams" Class

tons standard (4,500 3.370 Displacement: tons full load)
431 (w.l.), 437 (o.a.)×47×20 Dimensions: 431 (w.l.), 437 (o.a.)×47×20 feet
2—5 inch, 54 cal. single
"Charles F. Adams" Group
(DDG 2 to DDG 14):—
Twin "Tartar" surface-to-air
missile launcher
"Berkeley" Group (DDG 15 to
DDG 24):—Single "Tartar"
surface-to-air missile launcher
Rocket launchers (ASROC), 2
triple tube torpedo launchers.
Geared steam turbines. 2 shafts,
S.H.P.:; 70,000=35 kts. Guns: Guided weapons: A/S weapons: Machinery:

Boilers: Allowance: 333 (18 officers, 315 men). Accomodation for 24 officers, 330 men Complement:

General

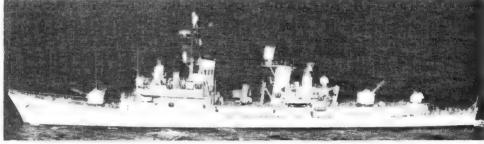
DDG 2—9 were provided under the Fisca! Year
1957 Appropriations, DDG 10-14 in 1958, DDG 1519 in 1959, DDG 20-22 in 1960, and DDG 23, 24
under the 1961 programme. They are equipped to
launch the "Tartar", surface-to-air missile with a
range of 10 to 20 miles. In addition they are equipped
with the latest in long range anti-submarine warfare
weapons. As compared with previous destroyers, the
ships have greater length overall, more beam and
heavier displacement. They have a new hull design
which is an evolution of the "Forrest Sherman" (DD
931) type and, like the "Forrest Sherman" class,
have aluminium superstructure. The most recent habitability improvements have been incorporated into their
construction, including air conditioning of all living
spaces. Cost: about \$17,000,000 to \$18,000,000 each
(with missiles and electronics \$34,000,000 each).

Engineering DDG 2, 3, 7, and 8 have General Electric steam turbines and electric generators.

The original design provided for two 5 inch guns, one forward in "A" position and one aft in "Y" position (anti-submarine weapons in "B" position and guided weapons in "X" position) but the after ("Y") 5 inch gun was suppressed in favour of a guided missile launcher, and re-sited in "Y" position.

Nomenclature

**Biddle was renamed Claude V. Ricketts on 28 luly 1964



LYNDE McCORMICK

1965, United States Navy, Official



GOLDSBOROUGH

Guided Missiles
"Tartar" weapons are smaller than "Terrier"
missiles, 42 missiles are carried. Missiles are 15 feet
long and I foot in diameter,
Twin in first group (DDG 2-14), see photographs of
Claude V. Ricketts and Lynde McCormick. Single in
second group (DDG 15-24), see photograph of Goldsbernugh borough.

Class

Class DDG 25, DDG 26 and DDG 27 were built by Defoe Shipbuilding Co., Bay City, Michigan, for the Royal Australian Navy, (DDG 27 awarded in Feb. 1964). DDG 28, DDG 29, and DDG 30 are being built by Bath Iron Works, Maine, for the Federal German Navy at a cost of \$43,754,000.

1964, courtesy Mr. J.C. Jeremy

Anti-Submarine

DDG 20, 21 and 22 have bow mounted long range

Photographs

Photographs

A large starboard bow surface view of Charles

F. Adams, and a port bow oblique aerial view of John

King appear in the 1961-62 and 1962-63 editions, a

starboard quarter surface view of John King in the

1963-64 edition, starboard bow aerial view of Henry

B. Wilson in the 1961-62 to 1963-64 editions, a star
board broadside surface view of Berkeley in the 1963
64 and 1964-65 editions, and a starboard quarter

ohlinue view of Claude V. Ricketts in the 1964-65

edition.



DESTROYER LEADERS (DL) Future Conversion to Destroyers (DDG)

MITSCHER, DDG 35 (ex-DL 2, ex-DD 927)

JOHN 5. McCAIN, DDG 36 (ex-DL 3, ex-DD 928)

WILLIS A. LEE, DDG 37 (ex-DL 4, ex-DD 929)

WILKINSON, DDG 38 (ex-DL 5, ex-DD 930)

Officially rated as Frigates (DL)

4 "Mitscher" Class

3,675 tons standard (4,730 tons Displacement: full load) 450 (pp.), 493 (o.a.)×49×21 Dimensions:

feet 'Tartar'' launcher in converted Guided weapons:

feet
"Tartar" launcher in converted
ships
2—5 inch, 54 cal, d.p. (single),
2—3 inch, AA. (1 twin)
1 Mark 108 ASW rocket launcher (Weapons "Alpha") 4—
21 inch fixed torpedo tubes, 1
D.C.T. ASROC launcher in converted ships
Geared steam turbines. 2 shafts.
S.H.P.: 80.000=35 kts.
Mitacher and John S. McCain; 4
controlled circulation type, 1,225
1b. per sq. in. pressure, 950
deg. F. superheat
Willis A. Lee and Wilkinson;
4 Foster Wheeler 2 drum type, 1,200 lb. per sq. in. pressure, 965 deg. F. superheat.
Allowance: 339 (19 officers 320 men). Accommodation for 30 officers, 350 men Guns: A/S weapons:

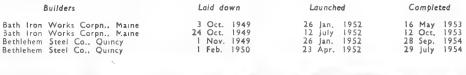
Machinery: Boilers:

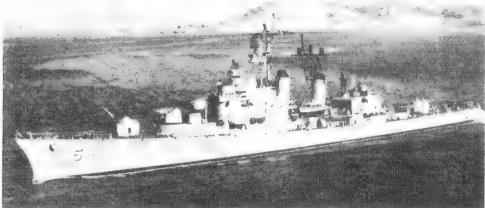
Complement:

General

General

Begun as Destroyers (DD) but re-rated as Destroyer Leaders (DL) while building in 1951 and again re-rated as Frigates (DL) on 1 Jan, 1955. They were then the largest destroyers ever built in the United States and in the world. Of a new design specifically constructed as a long-range fleet type for both administrative and anti-submarine duties. All ordered on 3 Aug. 1948. Named after United States admirals of the Second World War. Propelling machinery of light weight, includes many advanced engineering features. Used as destroyer squadron flagships, Wilkinson and Willis A. Lee are fitted with bow-mounted sonar in new 70-ft, bow section, Masts have been rerigged in all units with the crows' nest removed and replaced by "Tacan" dome. All being re-rated as Guided Missile Destroyers (DDG), see Conversion.





WILKINSON

1964. United States Navy, Official

Gunnery
The 5 inch guns are fully automatic loading, rapid fire, radar controlled. Newer longer range 3 inch, 70 cal. mountings were installed in 1957-58 in place of the former 3 inch, 50 cal. guns. The after 3 inch, 70 cal. twin mounting and the four 20 mm. AA. (twin) guns were removed for a helo platform in all ships (see Helicopter notes).

Conversion
Mitscher and John S. McCaln are being converted into guided missile armed destroyers DDG 35 and DDG 36 at Philadelphia Naval Shipyard under the Fiscal Year 1964 Conversion Programme, with "Tartar" missile launcher and ASROC anti-submarine rocket launcher, and all ships of the class will eventually be converted.

Helicopter Operation
John S. McCain, Mitscher and Wilkinson completed
the DASH installation in Apr. 1960, and Willis A. Lee
later, including the removal of the after 3 inch guns
to make way for a 50×30 ft. landing pad and hangar
for 2 drone anti-submarine helicopters.

Engineering
Mitscher and John S. McCain: 2 General Electric
reduction type. Main reduction gears; General Electric
double reduction; Willis A. Lee and Wilkinson: 2
Westinghouse, turbine reduction type. Main reduction
gears; De Laval double reduction.

Photographs

A starboard bow oblique aerial view of Mitscher with helicopter aft appears in the 1960-61 to 1963-64 editions.



WILLIS A. LEE

1959, "Our Navy" Photo



1966, courtesy Mr. John C. Jeremy

JOHN S. McCAIN

DESTROYER LEADER (DL) Former Anti-Submarine Light Cruiser (CLK)

Officially rated as Frigate (DL) (Formerly rated as Cruiser, Hunter Killer Ship, CLK)

I "Norfolk" Type

Displacement:

Guns: A/S weapons

Machinery:

Boilers:

Oil fuel Radius: Complement:

orfolk' Type

5.600 tons standard (7,300 tons full load)
Length: 520 (w.l.), 540\(\frac{1}{2}\) (o.d.)
feet. Beam: 54\(\frac{1}{2}\) feet Draught:
26 feet

8—3 inch, 70 cal. (4 twin)
ASROC, 2 Mark 108 rocket
launchers. 6 ASW fixed torpedo
tubes (2 triple)
2 sets G.E. geared turbines, 2
shafts. S.H.P.: 80,000=32 kts.
4 Babcock & Wilcox 2 drum,
1,200 lb. per sq. in. pressure,
950 deg. F.
1,400 tons
7,000 miles at 15 kts.
Allowance: 411 (26 officers, 385
men. Accommodation for 42
officers, 505 men

No. Builders Laid down
NORFOLK DL 1 (ex-CLK 1) New York Shipbuilding Corp. 1 Sep. 1949 Launched 29 Dec. 1951 Completed 4 Mar. 1953

General

Designed as a special category of anti-submarine vessel of cruiser size and entirely novel type to engage in hunter killer operations even in the worst weather, and incorporates lessons learned at Bikini in her construction, Built on a true cruiser hull, Cost, exclusive of armament, reported to be \$44,000,000. Re-rated in 1951 as a Destroyer Leader (DL), a category then new to the U.S. Navy, but reclassified as a Frigate (DL) on 1 Jan. 1955, Intended to serve as flagship for destroyer screens attached to fast carrier forces. Anti-Submarine

Anti-Submarine
Used primarily as a test ship for new anti-submarine equipment, The largest and heaviest sonar dome (39,500 lbs., or nearly 18 tons) was installed at Norfolk Naval Shipyard in 1958. Fitted with ASROC (anti-submarine rocket) and carried out evaluation of the then new weapon. The ASROC system consists of an integrated sonar device, an electrical digital fire-control computer, an eight missile launcher and the ASROC missiles themselves. Either a rocket propelled torpedo or a depth charge can be fired from the launcher. Stern cleared for anti-submarine helicopter operations.

Gunnery
The 8-20 mm. AA. guns were removed.

Engineering The trial

The trial speed exceeded 34 knots, (35 knoreached.) Shafts are fitted with six-bladed propellers.

Has hull form resembling that of the cruisers of the "Juneau" class, with tall bridge structure and curved stem. Note her bow view similarity to the "Mitscher" class, though she is a much larger ship.

Photographs

A starboard bow oblique aerial view appears in the 1959-60 edition, and a starboard quarter view in the 1957-58 to 1959-60 editions.

Class
Two Hunter Killer Ships were authorised in 1947.
Norfolk (originally CLK 1), subsequently DL-1 (Destroyer Leader), was ordered on 17 Nov. 1948 and commissioned on 4 Mar. 1953. The construction of the projected CLK 2 was deferred in 1949.



NORFOLK

1964, courtesy "Our Navy"

DESTROYER (DD) Former Guided Missile Armed Destroyer (DDG)

Experimental Destroyer

I Converted "Gearing" Class

Displacement: 2,400 tons standard (3,480 tons Dimensions:

2,400 tons standard (s).

full load)
390½×41×19 feet
4—5 inch, 38 cal. (two twin forward) 4—3 inch, 50 cal. (two twin, one abaft each fun-

A/S weapons Machinery:

Boilers:

Hedgehogs and 2 torpedo racks Geared turbines. 2 shafts, S.H.P.: 60,000=35 kts.

Oil fuel; Radius; Complement; 680 tons 6,000 miles at 15 kts, 296 (16 officers and 280 men) General

General
Originally a normal fleet destroyer (DD) of the
"Gearing" class. She was the third U.S. warship to
carry the guided missile designation (the first two
were Boston and Canberra, heavy cruisers). Conversion

Conversion

Converted to the world's first guided missile destroyer (DDG) under the Fiscal 1956 Appropriations. at the Boston Naval Shipyard, Massachusetts. Fitted with the complete "Terrier" missile installation, to test the feasibility of converting existing destroyers to guided missile destroyers. Commissioned on 3 Dec. 1956, She was the Navy's economical approach to a guided missile destroyer by conversion rather than by new construction.

Guided Missiles

Guided Missiles

Guided Missiles

The 14 "Terrier" missiles were carried in twin magazines level with the main deck. The twin missile launcher rotated to all points. The missile installation was removed in 1962 and the ship was reclassified as a destroyer, DD, and assigned to the operational test and development force, the after deck house being retained for experimental equipment.

Anti-Submarine

Had modern anti-submarine ordnance, and was capable of countering enemy attack whether by supersonic aircraft or modern submarine.

Reclassification

Reclassified from DD 712 to DDG 1 on 1 Dec. 1955; to DDG 712 on 30 Dec. 1956; to DDG 1 on 23 May 1957; and to DD 712 on 1 Oct. 1962.

No. Builders Launched
DD 712 (ex-DDG 1) Federal S.B. & D.D. Co. 15 Apr. 1945

Completed Converted 2 July 1945 30 Dec. 1956



GYATT

GYATT

1965, United States Navy, Official

Stabilisation

Stabilisation

The U.S. Navy's first warship to have a stabilisation system (British Denny-Brown retractable fin stabilisers) added to her hull structure. The system is designed to eliminate much of the rolling characteristic of small ships, It consists of two 45 sq. ft. retractable fins extending out from midships well below the waterline.

Photographs

Photographs
Starboard quarter and port bow view of Gyatt in the
1957-58 edition. Starboard quarter view in the 195960 edition. Port quarter oblique aerial view in the
1961-62 and 1962-63 editions. Starboard broadside
view in the 1957-58 to 1963-64 editions. Port broadside view in the 1964-65 edition.

DESTROYERS (DD) Future Conversion to DDG

18 "Forrest Sherman" Class

2,850 tons standard (4,200 tons full load) 418½×45×19½ feet Five ships being armed with "Tartar" missile launcher (see conversion notes below) Drope antissubmarine belicopter Displacement: Dimensions:

Guided weapons:

Drone anti-submarine helicopter (DASH) being installed in five Aircraft: Guns:

(DASH) being installed inships ships 3—5 inch, 54 cal. d.p. (1 forward, 2 aft), 4—3 inch, 50 cal. AA. (see Conversion notes below) 2 Hedgehogs, 6 homing torpedo tubes (2 triple) 2 geared steam turbines. 2 shafts S.H.P.: 70,000=over 33 kts. 4

A/S weapons: Machinery:

Boilers: Complement:

Allowance: 276 (16 officers, 260 men). Accommodation for 22 officers, 315 men.

General
This class of destroyers in regarded as dry, comfortable and successful. The construction of the first three was provided for under the 1952-53 programme. Not radical in design but embody certain improvements in armament. Increased freeboard forward. Entire ship's structure above main deck including gur foundations is of aluminium to obtain maximum stability while maintaining minimum ship displacement. Air conditioned throughout.

Serial Numbers

(DD 934 was ex-lapanese Hanazuki, DD 935 was ex-German T 35, DD 939 was ex-German Z 39).

Conversion

Five of this class are being modernised under the 1964 Conversion Programme, with "Tartar" missile launcher and drone anti-submarine helicopter (DASH), and all 18 may eventually be converted.

Converted: Decatur DD 936 to DDG 31 at Boston Naval Shipyard, John Paul Jones DD 932 to DDG 32 at Philadelphia Naval Shipyard, Parsons DD 949 to DDG 33 at Long Beach Naval Shipyard, Somers DD 947 to DDG 34 at San Francisco Naval Shipyard, Barry DD 933 is scheduled for ASW modification.

Parsons was taken in hand in Jan. 1966 for 18-month conversion. All guns except forward 5-inch removed and torpedo tubes replaced by ASROC. Somers is also undergoing conversion to guided missile destroyer in 1966 to July 1967.

Five more of the class will be reconstructed under the Fiscal Year 1966 Conversion Programme, with new ASW capabilities:—

ASW capabilities:—
Forrest Sherman DD 931, Davis DD 937, Jonas Ingram DD 938, Blandy DD 943, and Mullinnix DD 944, at Boston and Charleston Naval Shipyards.

Gunnery
The first United States warships with gums arranged to provide more fire power aft than forward.

In 1959 Barry was fitted with a new clipper bow housing a new type of sonar dome (further aft in other ships), and has stem anchor only. See photograph in the 1960-61 to 1965-66 editions.

Nomenclature Joy was renamed Turner Joy on 26 July 1957.

Photographs

Photographs
Photograps appear of John Paul Jones in the 1956-67
to 1959-60 editions, of Decatur and Mullinnix in the
1959-60 to 1962-63 editions, of Du Pont in the
1961-62 and 1962-63 editions, of Forrest Sherman in
the 1963-64 and 1964-65 editions, of Barry in the
1960-61 to 1965-66 editions, of Bigelow in the 196344 to 1965-66 editions. to 1965-66 editions

	No.	Builders	Laid down	Launched	Completed
FORREST SHERMAN	DD 931	Bath Iron Works Corpn.	27 Oct. 1953	5 Feb. 1955	9 Nov. 1955
JOHN PAUL JONES	DD 932	Bath Iron Works Corpn.	18 Jan. 1954	7 May 1955	5 Apr. 1956
BARRY	DD 933	Bath Iron Works Corpn.	15 Mar. 1954	1 Oct. 1955	31 Aug. 1957
DECATUR	DD 936	Bethlehem Steel Co. Quincy	13 Sep. 1954	15 Dec. 1955	30 Nov. 1956
DAVIS	DD 937	Bethlehem Steel Co. Quincy	1 Feb. 1955	28 Mar. 1956	6 Mar. 1957
MANLEY	DD 940	Bath Iron Works Corpn.	10 Feb. 1955	12 Apr. 1956	1 Feb. 1957
JONAS INGRAM	DD 938	Bethlehem Steel Co. Quincy	15 June 1955	8 July 1956	19 July 1957
DU PONT	DD 941	Bath Iron Works Corpn.	11 May 1955	8 Sep. 1956	1 July 1957
BLANDY	DD 943	Bethlehem Steel Co. Quincy	29 Dec. 1955	19 Dec. 1956	26 Nov. 1957
BIGELOW	DD 942	Bath Iron Works Corpn.	6 July 1955	2 Feb. 1957	8 Nov. 1957
MULLINNIX	DD 944	Bethlehem Steel Co. Quincy	5 Apr. 1956	18 Mar. 1957	7 Mar. 1958
HULL	DD 945	Bath Iron Works Corpn.	12 Sep. 1956	10 Aug. 1957	2 june 1958
EDSON	DD 946	Bath Iron Works Corpn.	3 Dec. 1956	l jan. 1958	7 Nov. 1958
RICHARD S. EDWARDS	DD 950	Puget Sound B. & D. Co	20 Dec. 1956	24 Sep. 1957	5 Feb. 1959
MORTON	DD 948	Ingalls S.B. Corpn.	4 Mar. 1957	23 May 1958	16 Mar. 1959
SOMERS	DD 947	Bath Iron Works Corpn.	4 Mar. 1957	30 May 1958	3 Apr. 1959
PARSONS	DD 949	Ingalls S.B. Corpn.	17 June 1957	19 Aug. 1958	29 Oct. 1959
TURNER JOY	DD 951	Puget Sound B. & D. Co.	30 Sep. 1957	5 May 1958	3 Aug. 1959
		37.			



TURNER JOY

1966



BLANDY

1963, "Our Navy" Photo



Destroyers—contd.

Destroyers (DD, ex-DDE, ex-DDK)

8 "Carpenter" Class

Carpenter and Robert A. Owens: 2,500 tons standard (3,550 tons Displacement:

2.500 tons standard (3,550 tons full load)
Other six: 2.425 tons standard (3,500 tons full load)
390} (o.a.)×41×19 feet
Carpenter ard Robert A. Owens:
4—3 inch (2 twin)
Other six: 4—5 inch, 38 cal.
Trainable hedgehog. 2—21 inch fixed torpedo tubes, 6 homing torpedo tubes (2 triple), 2 helicopters (DASH)
Geared turbines. 2 shafts. S.H.P.:
60,000=35 kts.

A/S weapons:

Machinery:

Boilers:

650 tons

Oil fuel: Radius: Complement:

D mensions: Guns:

650 tons 5,800 miles at 15 kts. Allowance: 264 (14 officers, 250 men. Accommodation for 21 officers, 270 men

General

General
Originally designed as units of the "Gearing" class, Robert A. Owens and Carpenter, towed to Newport News in 1947, were completed as Hunter-killer Destroyers on Nov. 5. 1949, and Dec. 15. 1949, respectively. The remaining six were converted under the 1949 Program. Launch dates above. They were rated as DDKs until March 4, 1950, when the DDE and DDK types merged. All reclassified as DD on 30 June 1962. Conversion
Fred T. Berry, Keppler, Lloyd Thomas, McCaffery and Norris have undergone FRAM II conversion, and Carpenter and Robert A. Owens FRAM I conversion.
Gunnery
Robert A. Owens had six 3-inch guns. In Carpenter the forward and after 5-inch twin gun mountings were removed. a pair of twin 3-inch automatic weapons substituted, and a bandstand containing a large weapon of the hedgehog type installed in place of the forward superimposed 5 inch mounting.

Builders Launched FRED T. BERRY Bethlehem, S. Pedro 858 Bethlehem, S. Pedro
Consolidated Steel Corpn. (comp. by Newport News)
Bethlehem, S. Pedro
Bethlehem, San Francisco
Bethlehem, S. Pedro
Bethlehem, S. Pedro
Bath Iron Works Corpn.
Bethlehem, San Francisco CARPENTER HARWOOD KEPPLER 825 861 24 May 24 June 12 Apr. 25 Feb. 15 July 765 McCAFFERY 860 NORRIS ROBERT A. 859 827 **OWENS** July Oct. LLOYD THOMAS 764

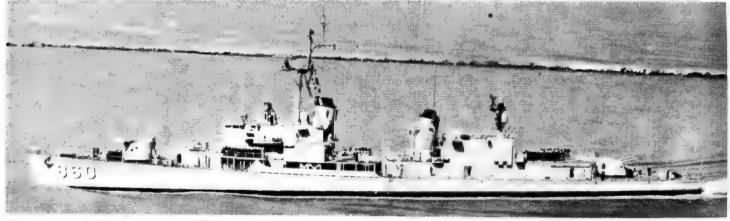


HARWOOD

1964, A. & J. Pavia

Photographs

Photographs
Photographs of Lloyd Thomas in the 1953-54 to 1957S8 editions, of Carpenter in the 1957-58 to 1959-60
editions, of Fred T. Berry in the 1957-58 to 196263 editions, of Keppler in the 1959-60 to 1963-64
editions, of Norris in the 1963-64 to 1965-66 editions.



NORRIS (after FRAM II conversion)

1966.

Destroyers (DD, ex-DDE)

7 "Basilone" Class

Displacement: 2,425 tons standard (3,500 tons 2.425 tons standard (3,500 tons full load)
390\(^1\) (o.a.)\times41\times19 feet
4—5 inch, 38 cal., (2 twin)
Fixed hedgehog, 6 homing torpedo tubes (2 triple)
Geared turbines. 2 shafts, S.H.P.:
60,000=35 kts. Dimensions: Guns: A/S weapons: Machinery:

Boilers: 650 tons Oil fuel:

5,800 miles at 15 kts. Allowance: 264 (14 officers, 250 men). Accommodation for 21 officers, 270 men Radius: Complement:

Builders above. Basilone and Epperson, both completed Builders above. Basilone and Epperson, both completed at Bath, were two long suspended units of the "Gearing" class. They were converted to ASW (for anti-sub-marine warfare) and completed as escort destroyers (DDE). They were armed with new weapons and equipped with improved sonar and other electronic gear. Five other units were 4-gun "Gearing" redesigned DDEs on 4 March 1950. All were again reclassified as DDs on 1 July 1962.

Conversion

All of this class have undergone FRAM I conversion. Photographs

Photographs
A photograph of Holder appears in the 1953-54 to 1957-58 editions, of Epperson in the 1954-55 to 1959-60 editions, of Damato, in the 1957-58 to 1959-60 editions, of Basilone in the 1959-60 to 1962-63 editions, and of Robert L. Wilson (before conversion) in the 1963-64 and 1964-65 editions.

	No.	Builders	Launched	Completed
BASILONE	824	Consolidated Steel Corpn.	21 Dec. 1945	21 July 1949
DAMATO	871	Bethlehem, Staten Island	21 Nov. 1945	26 Apr. 1946
EPPERSON	719	Federal S.B. & D.D. Co.	22 Dec. 1945	18 Mar. 1949
HOLDER	819	Consolidated Steel Corpn.	25 Aug. 1945	17 May 1946
NEW	818	Consolidated Steel Corpn.	18 Aug. 1945	4 Apr. 1946
RICH	820	Consolidated Steel Corpn.	5 Oct. 1945	2 July 1946
ROBERT L. WILSON	847	Bath Iron Works Corpn.	5 Jan. 1946	28 Mar. 1946



NEW (after conversion)

1765, United States Navy, Official

30 Destroyers (DD)

6 Radar Picket Destroyers (DDR)

"Frank Knox" Class

Displacement:	2,425 tons standard (3,550 tons full load)
Dimensions:	390½ (o.a.)×41×19 feet
Guns:	6-5 inch, 38 cal. (see Gunnery)
A/S weapons	ASROC and DASH (except
, ,	DDRs), 6 homing torpedo
	tubes (2 triple)
Machinery:	Geared turbines, 2 shafts, S.H.P.:
Machinery.	60,000=35 kts.
D - 11	
Boilers:	4
Oil fuel:	650 tons
Radius:	5,800 miles at 15 kts.
Complement:	Allowance: 275 (14 officers,
	260 men). Accommodation for
	20 officers. 335 men
	20 Onicers, 333 men

General
Originally of the "Gearing" class. The radar located abaft No. 2 stack on the after superstructure has been removed except in the six remaining DDRs.

Radar Picket Conversion
All 36 were converted from DDs to DDRs in 1949-53 and fitted with early warning radar to serve as long range-warning picket vessels against aircraft, but only Duncan, Ernest G. Small. Frank Knox, Goodrich, Kenneth D. Boiley and Turner remain as DDRs. They underwent FRAM II conversion in Fiscal Year 1960 and 1961.

Gunnery

The secondary armament of six 3-inch anti-aircraft guns in three twin mountings has now been removed from all these ships.

Appearance

All tripod radar mainmasts were removed and re-placed by a new type of mainmast for "TACAN" and ECM antennae on the fore side of the after funnel.

FRAM Conversions
The six DDRs and the DDs Benner, Chevaller,
Everett F. Larson and Perkins are FRAM II conversions. All the remaining 26 ships are FRAM I conversions, Equ'pped with DASH except DDRs. The
FRAM II DDs have VDS.

Photographs
A photograph of Vesole appears in the 1957-58 edition, of Bordelon in the 1957-58 to 1961-62 editions, of Newman K, Perry in the 1960-61 and 1961-62 editions, of Fisk in the 1960-61 to 1963-64 editions, of Turner (after FRAM 11 conversion) in the 1962-63 to 1964-65 editions, of Frank Knox (after FRAM 11 conversion) in the 1962-63 to 1965-66 editions, of Goodrich (after FRAM 11 conversion) in the 1962-63 to 1965-66 editions.

Reclassification
Benner, Chevalier, Everett F. Larson and Perkins
were reclassified from DDR to DD in 1962 and the
others (except six remaining as DDR, were reclassified as DD in 1963 and 1964 after FRAM conversions.

Destroyers-contd.

	No.	Builders	Launched	Completed
BENNER	807	Bath Iron Works Corpn.	20 Nov. 1944	13 Feb. 1945
BORDELON	881	Consolidated Steel Corpn.	3 Mar. 1945	5 June 1945
CHARLES P. CECIL	835	Bath Iron Works Corpn.	22 Apr. 1945	29 June 1945
CHEVALIER	805	Bath Iron Works Corpn.	29 Oct. 1944	9 Jan. 1945
CORRY	817	Consolidated Steel Corpn.	28 July 1945	26 Feb. 1946
DENNIS J. BUCKLEY	808	Bath Iron Works Corpn.	20 Dec. 1944	2 Mar. 1945
DUNCAN	874 (DDR)	Consolidated Steel Corpn.	27 Oct. 1944	25 Feb. 1945
DYESS	880	Consolidated Steel Corpn.	26 Jan. 1945	21 May 1945
ERNEST G SMALL	838 (DDR)	Bath Iron Works Corpn.	9 June 1945	21 Aug 1945
EUGENE À. GREENE	711	Federal S.B. & D.D. Co.	18 Mar. 1945	8 June 1945
EVERETT F. LARSON	830	Bath Iron Works Corpn.	28 Jan. 1945	6 Apr. 1945
FECHTELER	870	Bethjehem, Staten Island	19 Sep. 1945	2 Mar. 1946
FISKE	842	Bath Iron Works Corpn.	8 Sep. 1945	28 Nov. 1945
FRANK KNOX	742 (DDR)	Bath Iron Works Corpn.	17 Sep. 1944	11 Dec. 1944
FURSE	882	Consolidated Steel Corpn.	9 Mar. 1945	10 July 1945
GOODRICH	831 (DDR)	Bath Iron Works Corpn.	25 Feb. 1945	24 Apr. 1945
HANSON	832	Bath Iron Works Corpn.	11 Mar. 1945	11 May 1945
HAWKINS	873	Consolidated Steel Corpn.	7 Oct. 1944	10 Feb. 1945
HENRY W. TUCKER	875	Consolidated Steel Corpn.	8 Nov. 1944	12 Mar. 1945
HERBERT J. THOMAS	833	Bath Iron Works Corpn.	25 Mar. 1945	29 May 1945
HIGBEE	806	Bath Iron Works Corpn.	12 Nov. 1944	27 Jan. 1945
KENNETH D. BAILEY	713 (DDR)	Federal S.B. & D.D. Co.	17 June 1945	31 July 1945
LEARY	879	Consolidated Steel Corpn.	20 Jan. 1945	7 May 1945
McKEAN	784	Todd Pacific Shipyards	31 Mar. 1945	9 June 1945
MYLES C. FOX	829	Bath Iron Works Corpn.	13 Jan. 1945	20 Mar. 1945
NEWMAN K. PERRY	883	Consolidated Steel Corpn.	17 Mar. 1945	26 July 1945
O'HARE	889	Consolidated Steel Corpn.	22 June 1945	29. Nov. 1945
PERKINS	877	Consolidated Steel Corpn.	7 Dec. 1944	5 Apr. 1945
ROGERS	876	Consolidated Steel Corpn.	20 Nov. 1944	26 Mar. 1945
SOUTHERLAND	743	Bath Iron Works Corpn.	5 Oct. 1944	22 Dec. 1944
STEINAKER	863	Bethlehem, Staten Island	13 Feb. 1945	26 May 1945
STICKELL	888	Consolidated Steel Corpn.	16 June 1945	26 Sep. 1945
TURNER	834 (DDR)	Bath Iron Works Corpn.	8 Apr. 1945	12 June 1945
VESOLE	878	Consolidated Steel Corpn.	29 Dec. 1944	23 Apr. 1945
WILLIAM M. WOOD	715	Federal S.B. & D.D. Co.	29 July 1945	23 Nov. 1945
WILLIAM R. RUSH	714	Federal S.B. & D.D. Co.	8 July 1945	21 Sep. 1945



DUNCAN

1966, courtesy Mr. John C. Jeremy



KENNETH D. BAILEY

1964, United States Navy, Official



WILLIAM R. RUSH (after FRAM I conversion)

1965, United States Navy, Official (direct from U.S.S. William R. Rush, courtesy Commanding Officer)

45	"Gearing" Class
Displacement:	2,425 tons standard, Witek 2,465 tons (3,479 to 3,520 tons full load)
Dimensions:	$390\frac{1}{2}$ (o.a.)×408×19 (max.) feet
Guns:	4-5 inch, 38 cal. (two twin)
A/S weapons:	(see Gunnery) DASH, ASROC, 2 triple tube
Tubes:	See Torpedo Armament
Machinery:	Geared turbines. 2 shafts, S.H.P.: 60,000=35 kts
Boilers:	4
Oil fuel:	650 tons
Radius:	5,800 miles at 15 kts.
Complement:	Allowance: 274 (14 officers) 260 men). Accommodation for 23
neral	officers, 340 men

General

General

General

Enlarged versions of "Allen M. Summer" type, with extra 14 feet length, necessitated by additional installations. All had tripod mast fitted to accommodate new large radar aerials. A 165 ton, 120-feet long bow section of the uncompleted destroyer Seymour O. Owens was transferred to the Ernest G. Small to replace the latter's bow section which was lost when that ship struck a mine off Songjin, Korea, 7 Oct. 1951. Similarly, the bow of the uncompleted sister ship, Lansdale, a section weighing 60 tons, was removed and welded on to Floyd B. Parks which was damaged in spring 1956 in collision with the heavy cruiser Columbus. Of this class the experimental destoyer Timmerman, AG 152, ex-EDD 828, completed to a new design (EDD) but redesignated (AG), was scrapped in 1959, Richard E. Kraus, formerly AG, was restored to DD in Jan. 1954. Cancellations: DD 809-816, 854-856, 881-926. The uncompleted Abner Read (769) and Noel (768) were scrapped. scrapped.

Reconstruction

Reconstruction
Perry, DD 844, converted for anti-submarine warfare at a cost of \$7,700,000 in Boston Naval Shipyard, was the first of the destroyers to be modernised under the FRAM Program. She lost some of her conventional armament but gained new weapons and electronic equipment. Conversion commenced on 1 May 1959 and was completed on 1 Apr. 1960. All the ships of this class, except Witek, have undergone FRAM 1 conversion and are equipped with DASH, ASROC launcher and two torpedo launchers in place of the old torpedo tubes. FRAM 1 extends life eight years, rebuilds superstructure, rehabilitates engines and electronics, and installs ASROC. To total 79 units.
FRAM II extends life five years, installs DASH and variable depth sonar, VDS. To total 52 units.

variable depth sonar, VDS. To total 52 units.

Gunnery

"B" twin 5-inch mounting was removed from the experimental destroyers Sarsfield and Witek, and the after twin 5-inch mounting from Witek in 1962 to make room for installation of sonar dome tow-hoist mechanism. "B" (see Gearing below) or "Y" twin 5-inch mounting and the three twin 3-inch mountings were removed from the FRAM I conversions.

Torpedo Armament

Five 21-inch tubes removed from FRAM conversions.

Five 21-inch tubes removed from FKAM conversions. Jet Propulsion

A new system knows as "pumpjet" was installed in Witek, EDD 848, in 1959 (photograph in the 1960-61 to 1963-64 editions.) This device consists of twin sets (for 30,000 H.P. engines) which replace convertional propellers and make the ship quieter (see illustrations in page 478, 1959-60 edition). Class

Richard E. Kraus, Sarsfield and Witek are EDD (experimental destroyers). Gyatt was converted into a guided missile destroyer in 1956, see earlier page.

Photographs
Of Meredith in the 1952-53 to 1957-58 editions,
Charles R. Ware in the 1956-57 and 1957-58 editions,
Theodore E. Chandler in the 1957-58 to 1959-60 editions,
Forrest Royal in the 1959-60 edition, Agerholm
in the 1961-62 to 1963-64 editions, Stribling in the
1962-63 to 1965-66 editions.

Disposals

Disposals

The uncompleted Landsdale, DD 766, and Seymour D. Owens, DD 767 (stricken on 9 June 1958) and Seamon, DD 791 (stricken in Mar. 1961) were scrapped. The unemployed Castle, DD 720 and Woodrow R. Thompson DD 721, were scrapped on 29 Aug. 1955.

	No.
AGERHOLM ARNOLD J. ISBEL BAUSSELL BRINKLEY BASS BROWNSON CHARLES H. ROAN CHARLES R. WARE CONE EVERSOLE FLOYD B. PARKS FORREST ROYAL GEARING GEORGE H. McKENZIE GLENNON	DD 826
ARNOLD I. ISBEL	DD 869 DD 845
BAUSSELL	DD 845
BRINKLEY BASS	DD 887
BROWNSON	DD 868
CHARLES H. ROAN	DD 853
CHARLES R. WARE	DD 865
CONE	DD 866
EVERSOLE	DD 789
FLOYD B. PARKS	DD 884
FORREST ROYAL	DD 872
GEARING	DD 710
GEORGE H. McKENZIE	DD 836
GLENNON	DD 840
GURKE	DD 783
HAMNER HAROLD J. ELLISON HENDERSON HOLLISTER IAMES F. KYES	DD 718
HAROLD J. ELLISON	DD 864
HENDERSON	DD 785 DD 788
IAMES E. KYES	DD 787
JOHN R. CRAIG	DD 885
	DD 821
JOHNSTON JOSEPH P. KENNEDY, Jr.	DD 850
LEONARD F. MASON	DD 852
MEREDITH	DD 890
NOA	DD 841
ORLECK	DD 886
DZBOURN	DD 846
PERRY	DD 844
POWER	DD 839
RICHARD B. ANDERSON	DD 786
RICHARD E. KRAUS (ex-AG 51)	
ROBERT H. McCARD	DD 822
RUPERTUS	DD 782 DD 851
SAMUEL B. ROBERTS	DD 823
SARSFIELD	DD 823
SHELTON	DD 790
STRIBLING	DD 867
THEODORE E. CHANDLER	DD 717
VOGELGESANG	DD 862
WARRINGTON	DD 843
WILLIAM C. LAWE	DD 763
WILTSIE	DD 716
WITEK	DD 848
,	

Builders Bath Iron Works Corpn, Bethlehem, Staten Island Bath Iron Works Corpn, Consolidated Steel Corpn. Bethlehem, Staten Island Bethlehem, Staten Island Bethlehem, Staten Island Bethlehem, Staten Island Godd Pacific Shipyards Consolidated Steel Corpn. Bethlehem, Staten Island Federal S.B. & D.D. Co. Bath Iron Works Corpn, Bath Iron Works Corpn, Todd Pacific Shipyards Federal S.B. & D.D. Co. Bethlehem, Staten Island Todd Pacific Shipyards Todd Pacific Shipyards Todd Pacific Shipyards Todd Pacific Shipyards Consolidated Steel Corpn. Consolidated Steel Corpn. Bethlehem, Quincy Bethlehem, Quincy Consolidated Steel Corpn. Bath Iron Works Corpn, Consolidated Steel Corpn. Bath Iron Works Corpn, Todd Pacific Shipyards Bath Iron Works Corpn, Todd Pacific Shipyards Bethlehem, Quimcy Consolidated Steel Corpn. Bath Iron Works Corpn, Todd Pacific Shipyards Bethlehem, Saten Island Bethlehem, Staten Island Bethlehem, Staten Island Bath Iron Works Corpn. Bethlehem, San Francisco Federal S.B. & D.D. Co. Bath Iron Works Corpn. Bath Iron Works Corpn. Bethlehem, San Francisco Federal S.B. & D.D. Co. Bath Iron Works Corpn.	Launched 30 Mar. 1946 6 Aug. 1945 19 Nov. 1945 26 May 1945 15 Mar. 1946 12 Apr. 1945 13 Mar. 1946 18 Feb. 1945 14 July 1945 15 Feb. 1945 14 July 1945 15 Feb. 1945 14 Mar. 1945 15 Feb. 1945 16 May 1945 17 July 1945 18 May 1945 19 Oct. 1945 19 Oct. 1945 19 Oct. 1945 10 July 1945 11 May 1945 12 May 1945 12 May 1945 13 May 1945 14 Apr. 1945 15 Feb. 1945 16 July 1945 17 July 1945 18 June 1945 19 Oct. 1945 19 Oct. 1945 19 Oct. 1945 19 Oct. 1945 10 July 1945 11 Sep. 1945 12 May 1945 13 May 1945 14 Sep. 1945 15 Jan. 1946 16 June 1945 17 July 1945 18 June 1945 19 Oct. 1945 19 June 1945 19 Oct. 1945 19 June 1945 19 Jun	Completed 20 June 1946 5 Jan 1946 7 Feb. 1946 14 Sep. 1945 17 Nov. 1945 12 Sep. 1945 11 July 1945 10 May 1946 3 May 1946 3 May 1945 13 July 1945 4 Oct. 1945 12 May 1945 23 June 1946 20 Aug. 1945 21 July 1945 24 Aug. 1946 26 June 1946 27 Aug. 1946 28 June 1946 31 Dec. 1946 31 Dec. 1945 31 July 1945 4 Aug. 1946 4 Dec. 1946 28 June 1946 31 Dec. 1946 31 July 1945 5 Mar. 1946 13 Sep. 1945 28 Sep. 1945 28 Mar. 1946 13 Sep. 1945 29 Mar. 1946 13 Sep. 1945 21 June 1946 22 Oct. 1946 23 May 1946 24 Dec. 1946 25 Apr. 1946 28 Apr. 1946 29 Sep. 1945 20 Dec. 1946 21 June 1946 21 June 1946 22 Oct. 1946 31 July 1945 21 June 1946 31 July 1945 21 June 1946 32 Apr. 1946 34 Dec. 1946 36 Dec. 1946 37 Dec. 1946 38 Dec. 1946 39 Dec. 1946 31 July 1945 31 July 1945 31 July 1945 32 Dec. 1946 31 Jan 1946 38 Apr. 1946
£		



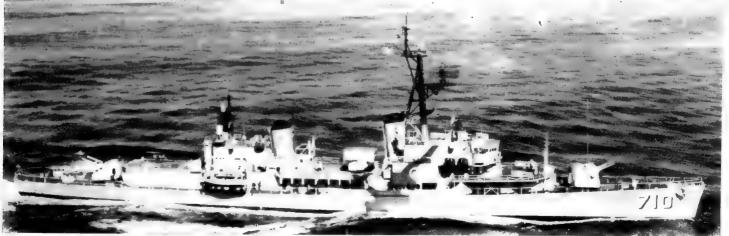
FLOYD B. PARKS

1966, Nobuo Itoki



SAMUEL B. ROBERTS

1964, A. & J. Pavia



GEARING

1964, United States Navy, Official (direct from U.S.S. Gearing, courtesy Commanding Officer)

Destroyers—contd.

53 "Allen M. Sumner" Class

Displacement:	2,200 tons standard (3,300 tons full load)
Dimensions:	$376\frac{1}{4} \times 40\frac{1}{4} \times 19$ (max.) feet
Guns:	6—5 inch, 38 cal., 6—3 inch, 50 cal. AA. (3 inch removed from FRAM conversions)
A/S weapons:	2 hedgehogs mounted on deck-
	house abreast bridge front, 6
	homing torpedo tubes (2 triple). FRAM conversions also have 2
	fixed torpedo tubes and DASH.
Machinery:	Geared turbines. 2 shafts. S.H.P.:
	60,000=33 kts.
Boilers:	4 Babcock & Wilcox, working
	pressure 600 lb. per sq. inch.
Oil fuel:	650 tons
Radius:	6,000 miles at 15 kts.
Complement:	Allowance: 274 (14 officers, 260 men.) Accommodation for 22 officers, 300 men
	22 01110010, 500 111011

General

Had a larger radius of action than destroyers previously constructed. Type is an enlargement and modification of the "Fletcher" design. After set of tubes was removed. Collett, damaged in collision with Ammen, received replacement bow from suspended Seaman, in Aug. 1960. Twelve of this class (two scrapped) were fitted for minelaying and re-rated as DM 23-24 (see Cooper, Drexler, Mannert D. Abele, Meredith.

Reconstruction:

John W. Thomason, was the prototype conversion for this class under the "FRAM II" Programme. Fitted with "DASH" (drone anti-submarine helicopter) on after deck landing area, with hangar facilities, variable depth sonar (1 ton sonar dome dropped over stern) and ASW torpedo tubes. The six 3 inch guns and 5—21 inch torpedo tubes were removed.

A/S Weapons
In the unconverted ships all but one D.C. rack and all K-guns were removed and replaced by two side-launching torpedo racks.

Photographs
Photographs of Moale and Zeliars (before FRAM modernisation) appear in the 1957-58 edition, of Hyman in the 1954-55 to 1958-59 editions, of Waldron in the 1958-59 and 1959-60 editions, of Charles S. Sperry in the 1959-60 and 1960-61 editions, of Soley in the 1957-58 to 1962-63 editions, of Zeliars (after FRAM conversion) in the 1961-62 to 1964-65 editions, and of Borie (FRAM II conversion) in the 1963-64 and 1964-65 editions.

Gunnery
In the unconverted ships the 40 mm. and 20 mm. mounts were replaced by 3-inch, 50 cal. mounts (two twin, two single).

Beatty

Note absence of 3 inch guns in "Q" and "X" positions, and ASW torpedo nests in place of 21 inch torpedo tubes.

* 33 ships FRAM II Programme Conversion (20 ships not converted).

*ALFRED R. CUNNINGHAM *ALLEN M. SUMNER *AULT BARTON BEATTY *BLUE *BRISTOL BRUSH *BUSH *BUSH *COLLETT COMPTON *DE HAVEN *DOUGLAS H. FOX ENGLISH *FRANK E. EVANS GAINARD HANK HARLAN R. DICKSON HARRY E. HUBBARD HAYNSWORTH HENLEY *HUGH PURVIS *INGRAHAM *INGRAHA	DD 692 DD 698 DD 722 DD 756 DD 757 DD 744 DD 857 DD 745 DD 761 DD 707 DD 707 DD 707 DD 707 DD 708 DD 708 DD 708 DD 709 DD 731 DD 759 DD 759 DD 770 DD 729 DD 731 DD 728 DD 734 DD 757 DD 738 DD 7693 DD 778 DD 737 DD 738 DD 7693 DD 778 DD 738 DD 7781 DD 707 DD 788
*PUTNAM *ROBERT K. HUNTINGTON SOLEY *STORMES	DD 757 DD 781 DD 707 DD 780

0	Launchad	Completed
Builders	Launched	23 Nov. 1944
Bethlehem, Staten Island	3 Aug. 1944	
Federal S.B. & D.D. Co.	15 Dec. 1943	26 Jan. 1944
Federal S.B. & D.D. Co.	26 Mar. 1944	31 May 1944
Bath Iron Works Corpn.	10 Oct. 1943	30 Dec. 1943
Bethlehem, Staten Island	30 Nov. 1944	31 Mar. 1945
Bethlehem, Staten Island	28 Nov. 1943	20 Mar. 1944
Federal S.B. & D.D. Co.	4 July 1944	21 Sep. 1944
Bethlehem, San Pedro	29 Oct. 1944	17 Mar. 1945
Bethlehem, Staten Island	28 Dec. 1943	17 Apr. 1944
Bethlehem, San Francisco	11 Mar. 1945	28 June 1946
	13 Mar. 1944	17 May 1944
Federal S.B. & D.D. Co.		16 May 1944
Bath Iron Works Corpn.		4 Nov. 1944
Federal S.B. & D.D. Co.	17 Sep. 1944	
Bath Iron Works Corpn.	9 Jan. 1944	31 Mar. 1944
Todd Pacific Shipyards	30 Sep. 1944	26 Dec. 1944
Federal S.B. & D.D. Co.	27 Feb. 1944	4 May 1944
Bethlehem, Staten Island	3 Oct. 1944	3 Feb. 1944
Federal S.B. & D.D. Co.	17 Sep. 1944	23 Nov. 1944
Federal S.B. & D.D. Co.	21 May 1944	28 Aug. 1944
Federal S.B. & D.D. Co.	17 Dec. 1944	17 Feb. 1945
Bethlehem, Staten Island	24 Mar. 1944	22 July 1944
Federal S.B. & D.D. Co.	15 Apr. 1944	22 June 1944
Bethlehem, San Francisco	8 Apr. 1945	8 Oct. 1946
Federal S.B. & D.D. Co.	17 Dec. 1944	1 Mar. 1945
		16 June 1944
Bath Iron Works Corpn.		10 Mar. 1944
Federal S.B. & D.D. Co.	16 Jan. 1944	
Bethlehem, San Pedro	1 Oct. 1944	17 Feb. 1945
Bethlehem, Staten Island	1 Nov. 1944	3 Mar. 1945
Bethlehem, Staten Island	1 Sep. 1944	30 Dec. 1944
Bethlehem, San Francisco	30 Sep. 1944	11 Oct. 1945
Federal S.B. & D.D. Co.	21 May 1944	21 July 1944
Bath Iron Works Corpn.	21 Nov. 1943	8 Feb. 1944
Bethlehem, San Francisco	12 Aug. 1944	26 Apr. 1945
Bethlehem, San Pedro	6 Feb. 1944	23 July 1944
Bath Iron Works Corpn.	12 Feb. 1944	2 May 1944
Bath Iron Works Corpn.	19 Mar. 1944	2 June 1944
Bath Iron Works Corpn.	29 Jan. 1944	14 Apr. 1944
Todd Pacific Shipyards		24 Nov. 1944
Federal S.B. & D.D. Co.		28 Feb. 1944
Bath Iron Works Corpn.	16 Jan. 1944	
	8 Dec. 1943	
Bath Iron Works Corpn.	7 May 1944	18 July 1944
Bethlehem, San Francisco	26 Mar. 1944	12 Oct. 1944
Todd Pacific Shipyards	10 Dec. 1944	3 Mar. 1945
ederal S.B. & D.D. Co.	8 Sep. 1944	7 Dec. 1944
Fodd Pacific Shipyards	4 Nov. 1944	27 Jan. 1965
Bethlehem, San Francisco	22 Apr. 1944	8 Mar. 1945
Bethlehem, Staten Island	23 Feb. 1944	24 June 1944
Bethlehem, Staten Island	25 Jan. 1944	20 May 1944
ederal S.B. & D.D. Co.	26 Mar. 1944	8 June 1944
Bath Iron Works Corpn.	27 Oct. 1943	21 Jan. 1944
ederal S.B. & D.D. Co.	14 June 1944	8 Sep. 1944
Bethlehem, San Pedro		27 Dec. 1944
odd Pacific Shipyards		25 Oct. 1944
out racine ompjards	19 July 1944	23 Oct. 1744



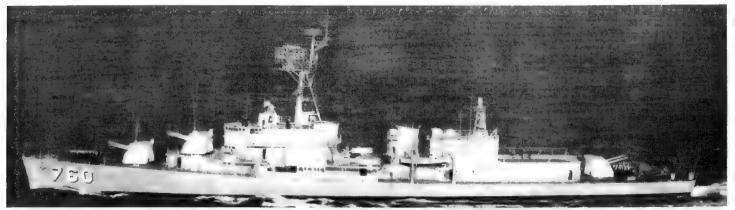
MOALE (FRAM II conversion), fixed A/S TT amidships

Added 1965, Dr. Giorgio Arra



BEATTY (unconverted) see note below)

Added 1965, Dr. Giorgio Arra



JOHN W. THOMASON (prototype FRAM II conversion)

1960, United States Navy Official

Destroyers (DD, ex-DDE)

Former Anti-Submarine Destroyers

17 Converted "Fletcher" Class

Displacement: 2,080 tons standard (2,940 tons full load)
376\frac{1}{2} (o.a.)\times39\frac{1}{2}\times18 feet
2...5 inch, 38 cal. (single);
4...3 irrch, 50 cal. (2 twin)
(see Gunnery)
1 ahead throwing rocket launcher
in place of "B" turret, or
trainable hedgehog, 2 torpedo
tubes. 2 hedgehogs (fixed)
FRAM conversions: Weapon
"Alpha", 2 hedgehogs, 6 homing torpedo tubes (2 triple),
DASH
G.E. geared turbines 2 shafts. 2.080 tons standard (2.940 tons Dimensions: Guns: A/S weapons

Machinery: Boilers:

DASH
G.E. geared turbines 2 shafts.
S.H.P.: 60,000=34 kts.
4 Babcock & Wilcox
650 tons
6,000 miles at 15 kts.
Allowance: 249 (14 officers,
235 men). Accommodation for
24 officers, 300 men Oil fuel; Radius: Complement;

General
Originally orthodox fleet destroyers (DD) of the
"Fletcher" class, but converted to serve as closesupport convoy escorts, nine under the 1948 Programme, three under the 1949 Programme, and six under
the 1950 Programme, and reclassified as DDE.
Reclassification Reclassification

Again reclassified from DDE to DD on 1 July 1962.

Conversion

Jenkins, Nicholas and Radford underwent FRAM II conversion (Fleet Rehabilitation and Modernisation) in 1960, with DASH, helo deck and hangar for two drones, and ASW torpedo launchers, a nest of three on each side; and others were scheduled in 1963.

Gunnery
The 4—3 inch guns were removed from the FRAM
I! Programme conversions.

Disposals Murray, DD 576, was stricken on 1 June 1965

Experimental

Experimental Soufley was equipped as an experimental destroyer, mounting 1—5 inch gun, 2—3 inch AA. guns, and no torpedo tubes, buth she was decommissioned in Nov. 1964. Photographs

Photographs
Photographs of Fletcher, Jenkins and Nicholas before conversion appear in the 1957-58 edition, of Cony in the 1958-59 to 1960-61 editions, of Murray in the 1957-58 to 1962-63 editions, and of Taylor in the 1963-64 and 1964-65 editions. A port bow view of Nicholas after conversion appears in the 1965-66 edition.

Destroyers—contd.

	No.	Builders	Laid down	Launched	Completed
BACHE	470	Bethlehem, Staten Island	19 Nov. 1941	27 June 1942	14 Nov. 1942
BEALE	471	Bethlehem, Staten Island	19 Dec. 1941	25 Aug. 1942	23 Dec. 1942
CONWAY	507	Bath Iron Works Corpn.	5 Nov. 1941	16 Aug. 1942	9 Oct. 1942
CONY	508	Bath Iron Works Corpn.	24 Dec. 1941	16 Aug. 1942	30 Oct. 1942
EATON	510	Bath Iron Works Corpn.	17 Mar. 1942	20 Sep. 1942	4 Dec. 1942
FLETCHER	445	Federal S.B. & D.D. Co.	2 Oct. 1941	3 May 1942	30 June 1942
JENKINS	447	Federal S.B. & D.D. Co.	22 Nov. 1941	21 June 1942	31 July 1942
NICHOLAS	449	Bath Iron Works Corpn.	3 Mar. 1942	19 Feb. 1942	4 June 1942
O'BANNON	450	Bath Iron Works Corpn.	3 Mar. 1941	14 Mar. 1942	26 June 1942
PHILIP	498	Federal S.B. & D.D. Co.	7 May 1942	13 Oct. 1942	20 Nov. 1942
RADFORD	446	Federal S.B. & D.D. Co.	2 Oct. 1941	3 May 1942	21 July 1943
RENSHAW	499	Federal S.B. & D.D. Co.	7 May 1942	13 Oct. 1942	4 Dec. 1942
SAUFLEY	465	Federal S.B. & D.D. Co.	27 Jan. 1942	19 July 1942	28 Aug. 1942
SPROSTON	577	Consolidated Steel Corpn.	1 Apr. 1942	31 Aug. 1942	18 May 1942
TAYLOR	468	Bath Iron Works Corpn.	28 Aug. 1941	7 June 1942	28 Aug. 1942
WALKER	517	Bath Iron Works Corpn.	31 Aug. 1942	31 Jan. 1943	2 Apr. 1943
WALLER	466	Federal S.B. & D.D. Co.	12 Feb. 1942	15 Aug. 1942	30 Sep. 1942



NICHOLAS (after FRAM II conversion)

United States Navy, Official

A/S Weabons

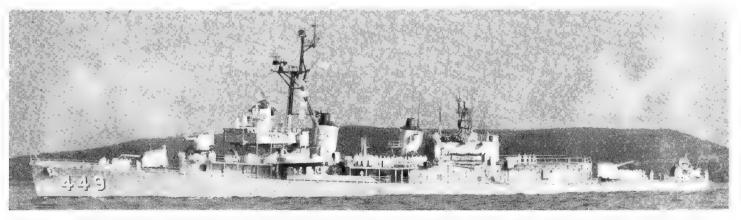
Fixed hedgehogs were installed on the port and star-board side of the forward shelter deck below the Jen bridge wings

Jenkins and Nicholas are fitted with variable depth sonar (VDS) on the stern.



JENKINS (after FRAM II conversion, equipped with DASH)

1962, courtesy Mr. W. H. Davis



NICHOLAS (variable depth sonar on stern)

1966, courtesy Mr. John C. Jeremy

Destroyers-contd.

36 Later "Fletcher" Class

Displacement:	2.050 tons standard (3,050 tons
Dimensions: Guns:	full load) 376½ (o.a.)×39½×18 feet
Gulls;	5—5 inch, 38 cal., 10—40 mm. Converted ships: 4—5 inch, 38
	cal., 6-3 inch, 50 cal. AA. (see Conversion)
Tubes:	5-21 inch (quintupled). Some (in reserve) have two sets of 5
A/S weapons:	2 Hedgehogs, 2 side-launching
Machinery:	torpedo racks G.E. geared turbines, 2 shafts.
Boilers:	S.H.P.: 60,000=34 kts. 4 Babcock & Wilcox
Oil fuel:	650 tons
Radius:	6,000 miles at 15 kts.
Complement:	Allowance: 250 (14 officers, 236 men), Accommodation for 24 officers, 300 men

General

Laid down under the 1942 Programme. They have lower fire controls and flat-faced bridges as compared with the "Fletcher" class. War losses: Callahan, Colhoun. Little.

Conversion

Conversion
Black, Caperton, Cogswell, Hopewell, John Hoad,
McGowan, McNair, Picking, Preston Uhlmann and
others have 4—5 inch guns (two forward and two aft),
6—3 inch, 50 cal. AA. guns (one pair superfiring aft,
two pairs between the funnels), and five torpedo
tubes abaft the after funnel. A 3-inch director on a
tall pedestal replaced the third 5-inch gun in "Q"
position. The forward torpedo bank between the funnels was suppressed. All vessels of the class have been
or were scheduled to be similarly rearmed exept
Albert W Grant. Bennion, Bullard, Bryant, Melvin,
Mertz and Norman Scott, which are in reserve and
mount their original battery.

Photographs

Photographs

A large port broadside view of Caperton appears in the 1956-57 to 1960-61 editions, a starboard bow view of Cotten in the 1957-58 to 1964-65 editions.

A large starboard broadside view of Cassin Young in the 1961-62 to 1964-65 editions, and a starboard quarter surface view of Clarence K., Bronson in the 1957-58 to 1965-66 editions.

Transfers

Heywood L. Edwards, DD 663, and Richard P. Leary, DD 664, were transferred to Japan in 1959, Cushing DD 797, to Brazil in 1961. Benham, DD 796, to Peru in 1960 and Jarvls, DD 799, and McGowan, DD 768, to Spain in 1960, Dortch, DD 670, to Argentina in 1961, Rooks, DD 804, and Wadleigh, DD 689, to Chile in 1963.

Chile in 1963.

Clarence K. Bronson, DD 668 (see photograph in the 1957-58 to 1965-66 editions) and Van Valkenburgh, DD 656, are scheduled to be transferred to the Turkish Navy in 1966.

Charles J. Badger, DD 657, and Hickox, DD 673, are scheduled for transfer to the Argentine Navy in the

near future.

Training
Gregory, DD 802, of this class, became a non-seagoing training ship at San Diego on 20 May 1966 and
was renamed Indoctrinator (the ship having been
deleted from the List of Naval Vessels on 1 May 1966.

Disposals

Monssen, DD 798, was stricken from the list in Feb.
1963, and MC Dermut, DD 677, on 1 Apr. 1965 (the
latter was broken up in 1966).

Colahan, DD 658, is to be disposed of.

	No.	Builders	Launched	Completed
ALBERT W. GRANT	DD 649	Charleston Navy Yard	29 May 1943	24 Nov. 1943
BEARSS	DD 654	Gulf S.B. Corpn.	25 July 1943	12 Apr. 1944
BENNION	DD 662	Boston Navy Yard	4 July 1943	14 Dec. 1943
BLACK	DD 666	Federal S.B. & D.D. Co.	28 Mar. 1943	21 May 1943
BULLARD	DD 660	Federal S.B. & D.D. Co.	28 Feb. 1943	9 Apr. 1943
BRYANT	DD 665	Charleston Navy Yard	29 May 1943	4 Dec. 1943
CAPERTON	DD 650	Bath Iron Works Corpn.	24 July 1943	30 July 1943
CASSIN YOUNG	DD 793	Bethlehem Co. San Pedro	12 Sep. 1943	31 Dec. 1943
CHAUNCEY	DD 667	Federal S.B. & D.D. Co.	28 Mar. 1943	31 May 1943
COGSWELL	DD 651	Bath Iron Works Corpn.	5 June 1943	17 Aug. 1943
COTTEN	DD 669	Federal S.B. & D.D. Co.	12 June 1943	24 july 1943
DASHIELL	DD 659	Federal S.B. & D.D. Co.	6 Feb. 1943	20 Mar, 1943
GATLING	DD 671	Federal S.B. & D.D. Co.	20 June 1943	19 Aug. 1943
HALSEY POWELL	DD 686	Bethlehem Co. Staten Island	30 June 1943	25 Oct. 1943
HEALY	DD 672	Federal S.B. & D.D. Co.	4 July 1943	3 Sep. 1943
HOPEWELL	DD 681	Bethlehem Co. San Pedro	2 May 1943	30 Sep. 1943
HUNT	DD 674	Federal S.B. & D.D. Co.	I Aug. 1943	22 Sep. 1943
INGERSOLL	DD 652	Bath Iron Works Corpn.	28 June 1943	31 Aug. 1943
IRWIN	DD 794	Bethlehem Co. San Pedro	31 Oct. 1943	14 Feb. 1944
JOHN HOOD	DD 655	Gulf S.B. Corpn.	23 Oct. 1943	7 June 1944
KIDD	DD 661	Federal S.B. & D.D. Co.	28 Feb. 1943	23 Apr. 1944
KNAPP	DD 653	Bath Iron Works Corpn.	10 July 1943	15 Sep. 1943
LEWIS HANCOCK	DD 675	Federal S.B. & D.D. Co.	1 Aug. 1943	29 Sep. 1943
McNAIR	DD 679	Federal S.B. & D.D. Co.	14 Nov. 1943	30 Dec. 1943
MARSHALL	DD 676	Federal S.B. & D.D. Co.	29 Aug. 1943	16 Oct. 1943
MELVIN	DD 680	Federal S.B. & D.D. Co.	17 Oct. 1943	24 Nov. 1943
MERTZ	DD 691	Bath Iron Works Corpn.	II Sep. 1943	19 Nov. 1943
NORMAN SCOTT	DD 690	Bath Iron Works Corpn.	28 Aug. 1943	5 Nov. 1943
PICKING	DD 685	Bethlehem Co. Staten Island	31 May 1943	21 Sep. 1943
PORTER	DD 800	Todd Pacific Shipyards	13 Mar. 1944	24 June 1944
PORTERFIELD	DD 682	Bethlehem Co. San Pedro	13 June 1943	30 Oct. 1943
PRESTON	DD 795	Bethlehem Co. San Pedro	12 Dec. 1943	20 Mar. 1944
REMEY	DD 688	Bath Iron Works Corpn.	24 July 1943	30 Sep. 1943
STOCKHAM	DD 683	Bethlehem Co., San Francisco	25 July 1943	11 Feb. 1944
UHLMANN	DD 687	Bethlehem Co. Staten Island	30 July 1943	22 Nov. 1943
WEDDERBURN	DD 684	Bethlehem Co., San Francisco	1 Aug. 1943	9 Mar. 1944



CASSIN YOUNG (five 5 inch guns)

Added 1965, United States Navy, Official



BLACK (four 5 inch guns)

50 "Fletcher" Class

2.100 tons standard (3,050 tens full load) $376\frac{1}{2}$ (0.a.)× $39\frac{1}{2}$ ×18 feet 5.—5 inch, 38 cal. d.p., 6.—40 mm, Bofors AA. (see Conversion) Rearmed ships: 4.—5 inch, 38 cal., 6.—3 inch, 50 cal. AA, 5.—21 inch (quintupled). 2 fixed Hedgehogs, 2 sidelaunching torpedo racks (some have 6 homing horpedo tubes) 2 G.E. geared turbines. 2 shafts. 5.H.P.: 60,000=34 kts. 4 Babcock & Wilcox 650 tons 6,000 miles at 15 kts. 2.100 tons standard (3,050 tens Displacement: Dimensions: Guns: Tubes: A/S weapons: Machinery: Boilers: Oil fuel: Radius: Complement: 650 tons 6,000 miles at 15 kts. Allowance: 249 (14 officers, 235 men). Accommodation for 24 officers, 300 men

General
Laid down under the 1940-41 Programme. Builders above. During the war six units (including Halford in 1943) were experimentally fitted with a seaplane and catapult, in place of deckhouse between "Q" and "X" turrets (armament being temporarily reduced by 1—5 inch gun and 5 torpedo tubes); and some, including Young, had only one set of tubes, All those with two sets now reduced to one. Eighteen of these ships were modified for duty as escort destroyers (DDE), viz: Bache, Beale, Conway, Cony, Eaton, Fletcher, Jenkins, Murray, Nicholas, O'Bannon, Philip, Radford, Renshaw, Saufley, Sproston, Taylor, Walker and Waller—see previous page. War losses: Abner Reed, Brownson, Bush, Chevalier, De Haven, Halligan, Hoel, Johnston, Longshaw, Luce, Morrison, Pringle, Spence, Strong, Twiggs, William D. Porter. Heavily damaged and subsequently scrapped: Evans, Haggard, Leutze, Newcomb, Thatcher. Sold: Hutchins. Cancelled: Percival, Watson.

Helicopter Operation
Hazelwood, DD531, has a helicopter flight deck in place of her torpedo tubes, after twin 40 mm. gun mountings, and "X" 5 linch gun, with small hangar on the port side abaft the funnels. She operates radio controlled ASW drone helicopters which release ASW weapons by remote control (see photograph above).

A large starboard quarter aerial view of Boyd appears in the 1957-58 edition, a port quarter oblique aerial view of Twining in the 1957-58 to 1959-60 editions, a port bow aerial view of Ross in the 1954-55 to 1957-58 editions, a starboard broadside view of Ross. port bow aerial view of Ross in the 1954-55 to 1957-58 editions, a starboard broadside view of Daly in the 1956-57 to 1960-61 editions, a large port oblique aerial view of Rowe in the 1957-58 to 1961-62 editions, and a port bow oblique aeriel view of Watts in the 1957-58 to 1963-64 editions.

Experimental Fullham, DD 474 and Howorth, DD 592 (now sunk, see Disposals), and Killen, D 593, now stricken, were trial ships in the 1958 atomic weapons tests, Fullham was used as a test hull by Norfolk Naval Shipyard during 1960-62 to determine the effects of underwater explosions.

Conversion

Conversion
Boyd, Cowell, Daly, Isherwood, Hailey, Mullany, Ross, Rowe, Smalley and others have four 5-inch (in "A", "B", "X" and "Y" positions), six 3 inch (twin mount in "Q" position, and two twins amidships between funnels), five 21 inch torpedo tubes (quintuple bank abaft the after funnel) and tripod mast. The forward bank of tubes were suppressed (3 inch now mounted in their place), All active units were rearmed, but over half the class are in reserve and mount their original armament. Hazelwood was converted with a flight deck and hangar to operate helicopters (see Helicopter Operation above).

Appearance
All the ships of this class built by the Bethlehem
Steel Co. have flat-sided funnels.

Transfers

Transfers

Of this class, Anthony, DD 515, was transferred to the German Federal Republic in 1957. Capps, DD 550, and David W. Taylor, DD 551, were loaned to Spain in 1957 for five years (renewed in 1962) Aulick, DD 569, Charette, DD 581, and Conner, DD 508 were transferred to Greece in 1959. Converse, DD 509, to Spain in 1959, Bennett, DD 473, and Guest, DD 472, to Brazil in 1959. Charles Ausburn, DD 570, Claxton, DD 571, Dyson, DD 572, Ringgold, DD 500, and Wadsworth, DD 516, to the German Federal Republic in 1958-60. Hall, DD 583, to Greece on 9 Feb. 1960. Halley, DD 556, to Brazil in 1961. Hale, DD 642, to Columbia in 1961. Heerman, DD 532, and Stembel, DD 644, to Argentina on 1 Aug. 1961, Isherwood, DD 520 to Peru on 8 Oct. 1961, Bradford, DD 545, and Brown, DD 546, to Greece on 28 Sep. 1962. Erben, DD 631, to Korea in May 1963.

Disposals

Disposals

Ammen, DD 527, was stricken from the Navy List
after major collision damage in 1960. Howarth, DD
592, was stricken on 1 June, 1961 and sunk by torpedoes off San Diego on 8 Mar, 1962, Fullham, DD
474, was sunk as a target ship by ships and aircraft
on 7 July 1962 off Cape Henry, Virginia. Killen, DD
593 was stricken in Jan. 1963 but was still being used
as a target in 1966, Smalley, DD 565, was stricken on
1 Apr. 1965, and sold. Tingey, DD 539, was expended
as a target in 1966.

Destroyers—contd.

	,				
	No.	Builders	Laid down	Launched	Completed
ABBOT	DD 629	Bath Iron Works Corpn.	21 Sep. 1942	17 Feb. 1943	23 Apr. 1943
BELL	DD 587	Charleston Navy Yard	24 Feb. 1942	24 June 1942	4 Mar. 1943
BOYD	DD 544	Bethlehem Co., San Pedro	2 Apr. 1942	29 Oct. 1942	8 May 1943
BRAINE	DD 630	Bath Iron Works Corpr.	12 Oct. 1942	7 Mar. 1943	11 May 1943
BURNS	DD 588	Charleston Navy Yard	9 May 1942	8 Aug. 1942	3 Apr. 1943
COWELL	DD 547			18 Apr. 1943	23 Aug. 1943
		Bethlehem Co., San Pedro	7 Sep. 1942		
DALY	DD 519	Bethlehem Co., Staten Island	29 Apr. 1942	24 Oct. 1942	9 Mar. 1943
FOOTE	DD 511	Bath Iron Works Corpn.	14 Apr. 1942	11 Oct. 1942	22 Dec. 1942
FRANKS	DD 554	Seattle-Tacoma S.B. Corpn.	8 Mar. 1942	7 Dec. 1942	30 July 1943
HALFORD	DD 480	Puget Sound Navy Yard	3 June 1941	29 Oct. 1942	1 May 1943
HARADEN	DD 585	Boston Navy Yard	3 June 1942	19 Mar. 1943	16 Sep. 1943
HARRISON	DD 573	Consolidated Steel Corpn.	25 July 1941	7 May 1942	25 Jan. 1943
HART	DD 594	Puget Sound Navy Yard	10 Aug. 1943	25 Sep. 1944	1 Dec. 1944
HAZLEWOOD	DD 531	Bethlehem Co., San Francisco	1 Apr. 1942	20 Nov. 1942	18 June 1943
HUDSON	DD 475	Boston Navy Yard	23 Feb. 1942	3 June 1942	13 Apr. 1943
IZARD	DD 589	Charleston Navy Yard	9 May 1942	8 Aug. 1942	15 May 1943
JOHN D. HENLEY	DD 553	Gulf S.B. Corpn.	21 July 1941	15 Nov. 1942	2 Feb. 1944
JOHN RODGERS	DD 574	Consolidated Steel Corpn.	25 July 1941	7 May 1942	9 Feb. 1943
KIMBERLEY	DD 521	Bethlehem Co., Staten Island	27 July 1942	4 Feb. 1943	22 May 1943
LA VALLETTE	DD 448	Federal S.B. & D.D. Co.	27 Nov. 1941	21 June 1942	11 Aug. 1942
LAWS	DD 558	Seattle-Tacoma S.B. Corpn.	19 May 1942	22 Apr. 1943	18 Nov. 1943
METCALF	DD 595	Puget Sound Navy Yard	10 Aug. 1943	25 Sep. 1944	15 Dec. 1944
MILLER	DD 535	Bethlehem Co., San Francisco	18 Aug. 1942	7 Mar. 1943	31 Aug. 1943
MULLANY	DD 528	Bethlehem Co., San Francisco	15 Jan. 1942	10 Oct. 1942	23 Apr. 1943
McCORD	DD 534	Bethlehem Co., San Francisco	17 Mar. 1942	10 Jan. 1943	19 Aug. 1943
McKEE	DD 575	Consolidated Steel Corpn.	2 Mar. 1942	2 Aug. 1942	31 Mar. 1943
OWEN	DD 536	Bethlehem Co., San Francisco	17 Sep. 1942	21 Mar. 1943	20 Sep. 1943
PAUL HAMILTON	DD 590	Charleston Navy Yard	20 Jan. 1943	7 Apr. 1943	15 Nov. 1943
PRICHETT	DD 561	Seattle-Tacoma S.B. Corpn.	20 July 1942	31 July 1943	15 Jan. 1944
ROBINSON	DD 562	Seattle-Tacoma S.B. Corpn.	12 Aug. 1942	28 Aug. 1943	31 Jan. 1944
ROSS	DD 563	Seattle-Tacoma S.B. Corpn.	7 Sep. 1942	10 Sep. 1943	21 Feb. 1944
ROWE			7 Dec. 1942	30 Sep. 1943	13 Mar. 1944
SCHROEDER	DD 564	Seattle-Tacoma S.B. Corpn. Federal S.B. & D.D. Co.	25 June 1942	11 Nov. 1942	31 Dec. 1942
SHIELDS	DD 501				
	DD 596	Puget Sound Navy Yard	10 Aug. 1943 7 Dec. 1942	25 Sep. 1944	22 Feb. 1945
SIGOURNEY	DD 643	Bath Iron Works Corpn.		24 Apr. 1943	29 June 1943
SIGSBEE	DD 502	Federal S.B. & D.D. Co.	22 July 1942	7 Dec. 1942	22 Jan. 1943
STANLEY	DD 478	Charleston Navy Yard	30 Dec. 1941	2 May 1942	15 Oct. 1942
STEPHEN POTTER	DD 538	Bethlehem Co., San Francisco	27 Oct. 1942	28 Apr. 1943	21 Oct. 1943
STEVENS	DD 479	Charleston Navy Yard	30 Dec. 1941	24 June 1942	1 Feb. 1943
STODDARD	DD 566	Seattle-Tacoma S.B. Corpn.	10 Mar. 1943	19 Nov. 1943	15 Apr. 1944
TERRY	DD 513	Bath Iron Works Corpn.	8 June 1942	22 Nov. 1942	26 Jan. 1943
THE SULLIVANS	DD 537	Bethlehem Co., San Francisco	10 Oct. 1942	4 Apr. 1943	30 Sep. 1943
TRATHEN	DD 530	Bethlehem Co., San Francisco	18 July 1942	22 Oct. 1942	28 May 1943
TWINING	DD 540	Bethlehem Co., San Francisco	20 Nov. 1942	11 July 1943	1 Dec. 1943
WATTS	DD 567	Seattle-Tacoma S.B. Corpn.	26 Mar. 1943	31 Dec. 1943	29 Apr. 1944
WICKES	DD 578	Consolidated Steel Corpn.	15 Apr. 1942	13 Sep. 1942	16 June 1943
WILEY	DD 597	Puget Sound Navy Yard	10 Aug. 1943	25 Sep. 1944	14 Mar. 1945
WILEH	DD 568	Seattle-Tacoma S.B. Corpn.	24 Apr. 1943	29 Jan. 1944	20 May 1944
YARNALL	DD 541	Bethlehem Co., San Francisco	5 Dec. 1942	25 July 1943	30 Dec. 1943
YOUNG	DD 580	Consolidated Steel Corpn.	7 May 1942	11 Oct. 1942	31 July 1943



HAZLEWOOD (as converted with helicopter hangar and flight deck aft)



ABBOT

1944, courtesy Dr. Ian S. Pearsall

34 "Gleaves-Livermore" Class

(including Ex-Destroyer Minesweepers)

Displacement:	1,700 tons standard (2,580 tons full load)
Dimensions:	341 (w.l.), 348½ (o.a.)×36× 18 feet
Guns:	4-5 inch. 38 cal., 4-40 mm.
Tubes:	5-21 inch (quintupled)
Machinery:	
Boilers:	4 Babcock & Wilcox
Oil fuel:	600 tons
Radius:	5,000 miles at 15 kts.
Complement:	240 (Accommodation for 21 officers, 270 men)

Butler, DMS 29, Forrest, DMS 24, and Harding, DMS 28, were scrapped. Hobson, DMS 26, sank in mid-Atlantic on 27 Apr. 1952, after collision with the aircraft carrier Wasp during a night exercise. All the remaining ships of this class are out of commission in reserve.

Gunnery

The armament of the former Destroyer Minesweepers (DMS) comprises 3—5 inch, 38 cal.; 4—40 mm. AA.; and 4 to 5—20 mm. AA.

Reclassification
Doyle, Jeffers, Hambleton and Rodman, formerly
high speed minesweepers DMS 34, DMS 27, DMS 20
and DMS 21, respectively, were reclassified as destroyers
on 15 Jan. 1955. Carmick, Cowie, Davison, Doran, Earle,
Endicott, Fitch, Gherardi, Knight, McCook, Mervine,
Quick and Thompson, formerly Destroyer Minesweepers
DMS 33, DMS 39, DMS 37, DMS 41, DMS 42, DMS 35.
DMS 25, DMS 30, DMS 40, DMS 36, DMS 31, DMS
32 and DMS 38, respectively, reverted to Destroyer
(DD) status on 15 July 1955.

Abbearance

The Seattle-built ships of this class have square-faced bridges with director on the bridge instead of mounted on a pedestal.

on a pedestal. Second World War losses: Aaron Ward, Beatty, Bristol, Carry, Emmons, Duncan, Glennon, Gwin, Ingra-ham, Maddox, Meredith, Manssen, Turner. Shubrick was so badly damaged that she was scrapped.

Photographs
A broadside silhouette photograph of Fitch (as DMS) and a port bow aerial view of Woolsey (as DD) appear in the 1950-51 to 1957-58 editions, a starboard bow view of Gleaves appears in the 1962-63 edition, a port bow view of Gherardi in the 1951-52 to 1964-65 editions, and a port broadside view of Fitch in the 1963-64 and 1964-65 editions.

Transfers
Buchanan, DD 484, and McCalla, DD 488, transferred to Turkey in 1949 and Lansdowne, DD 486, and DD 487, in 1950, Eberle, DD 430 and Ludlow. DD 438, to Greece in 1951. Nicholson, DD 442, to Italy in 1951. Ellyson and Macomb, DMS 19 and DMS 23. reclassified DD 454 and DD 458 in May 1954, fent to Japan in Oct. 1954, Rodman, DD 456, transferred to Taiwan China on 28 July 1955 and Plunkett, DD 431, on 16 Feb, 1959.

Disposals

Disposals

Livermore, DD 429, was stricken from the Navy List on 19 July 1956, and expended in tests during 1957-58.
Boldwin, DD 624, was stricken on 1 June 1961 (she went adrift on 15 Apr. 1961 while under tow, grounded off Montauk Point, Long Island, on 16 Apr. 1961, was salvaged on 4 June 1961 and scuttled on 5 June 1961).
Edison, DD 439, was stricken from the Navy List on 1 Apr. 1966.

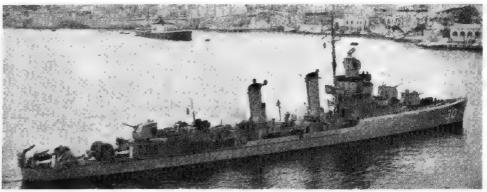
Destroyers—contd.

		Builders	Laid down	Lounched	Completed
CARMICK	DD 493	Seattle-Tacoma S.B. Corpn	29 May 1941	8 Mar. 1942	28 Dec. 1942
COWIE	DD 632	Boston Navy Yard	18 Mar. 1941	27 Sep. 1941	1 June 1943
DAVISON	DD 618	Federal S.B. & D.D. Co.	26 Feb. 1942	19 July 1942	11 Sep. 1942
DORAN	DD 634	Boston Navy Yard	14 June 1941	10 Dec. 1941	4 Aug. 1942
DOYLE	DD 494	Seattle-Tacoma S.B. Corpn.	29 May 1941	17 Mar. 1942	27 Jan. 1943
EARLE	DD 635	Boston Navy Yard	14 June 1941	10 Dec. 1941	1 Sep. 1942
EDWARDS -	DD 619	Federal S.B. & D.D. Co.	26 Feb. 1942	19 July 1942	17 Sep. 1942
ENDICOTT	DD 495	Seattle-Tacoma S.B. Corpn.	1 May 1941	5 Apr. 1942	25 Feb. 1943
ERICSSON	DD 440	Federal S.B. & D.D. Co,	118 Mar. 1940	23 Nov. 1940	11 Mar. 1941
FITCH	DD 462	Boston Navy Yard	6 Jan. 1941	14 June 1941	3 Feb. 1943
FRANKFORD	DD 497	Seattle-Tacoma S.B. Corpn	5 June 1941	17 May 1942	31 Mar. 1942
GHERARDI	DD 637	Philadelphia Navy Yard	16 Sep. 1941	12 Feb. 1942	15 Sep. 1942
GLEAVES	DD 423	Bath Iron Works Corpn.	16 May 1938	9 Dec. 1939	May 1940
GRAYSON	DD 435	Charleston Navy Yard	17 July 1939	7 Aug. 1940	15 Apr. 1941
HAMBLETON	DD 455	Federal S.B. & D.D. Co.	16 Dec. 1940	26 Sep. 1941	22 Dec. 1941
HERNDON	DD 638	Norfolk Navy Yard	26 Aug. 1941	5 Feb. 1942	20 Dec. 1942
JEFFERS	DD 621	Federal S.B. & D.D. Co.	25 Mar. 1942	26 Aug. 1942	4 Nov. 1942
KEARNEY	DD 432	Federal S.B. & D.D. Co.	1 Mar. 1939	9 Mar. 1940	13 Sep. 1940
KNIGHT	DD 633	Boston Navy Yard	18 Mar. 1941	27 Sep. 1941	23 June 1942
McCOOK	DD 496	Seattle-Tacoma S.B. Corpn,	1 May 1941	3 May 1942	15 Mar. 1943
MERVINE	DD 489	Seattle-Tacoma S.B. Corpn.	3 Nov. 1941	3 May 1942	16 June 1942
NELSON	DD 623	Federal S.B. & D.D. Co.	7 May 1942	15 Sep. 1942	25 Nov. 1942
NIBLACK	DD 424	Bath Iron Works Corpn.	8 Aug. 1938	18 May 1940	1 Aug. 1940
QUICK	DD 490	Seattle-Tacoma S.B. Corpn.	3 Nov. 1941	3 May 1942	2 July 1942
SATTERLEE	DD 626	Seattle-Tacoma S.B. Corpn.	10 Sep. 1941	17 July 1942	1 July 1943
STEVENSON	DD 645	Federal S.B. & D.D. Co.	23 July 1942	11 Nov. 1942	14 Dec. 1942
STOCKTON	DD 646	Federal S.B. & D.D. Co.	24 July 1942	11 Nov. 1942	9 Jan. 1943
SWANSON	DD 443	Charleston Navy Yard	15 Nov. 1939	2 Nov. 1940	15 July 1941
THOMPSON	DD 627	Seattle-Tacoma S.B. Corpn,	22 Sep. 1941	10 Aug. 1942	10 July 1943
THORN	DD 647	Federal S.B. & D.D. Co.	15 Nov. 1942	28 Feb. 1943	31 Mar. 1943
TILLMAN	DD 641	Charleston Navy Yard	8 Sep. 1941	20 Dec. 1941	4 June 1942
WELLES	DD 628	Seattle-Tacoma S.B. Corpn,	27 Sep. 1941	7 Sep. 1942	16 Aug. 1943
WILKES	DD 441	Boston Navy Yard	1 Nov. 1939	31 May 1940	12 June 1941
WOOLSEY	DD 437	Bath Iron Works Corpn.	9 Oct. 1939	12 Feb. 1940	7 May 1941



CARMICK

Added 1965, United States Navy, Official



GHERARDI (showing sweeping gear)

A. & I. Pavia



Destroyers-contd.

22 "Benson-Mayo" Class

Displacement:	1,620 tons standard (2,373 tons
	full load)
Dimensions:	$348\frac{1}{2}$ (o.a.) $\times 35\frac{1}{3} \times 18$ feet
Guns:	4-5 inch, 38 cal., 4-40 mm.
	AA.; 7-20 mm. AA.
Tubes:	5-21 inch (quintupled)
Machinery:	Geared turbines. 2 shafts.
	S.H.P.: 50,000=34 kts.
Boilers:	4 high pressure
Oil fuel:	600 tons
Radius:	5,000 miles at 15 kts.
Complement:	230 (Accommodation for 17
	officers, 280 men)
	•

G	n	er	αl

Built to the design of Bethlehem Steel Co. War losses: Barton, Laffey, Lonsdale. All of this class are out of commission, in reserve,

Appearance

All ships of the class have flat-sided furmels. Some still have 10 torpedo tubes. Others have none.

Transfers
Woodworth, DD 460, was transferred to Italy in
1951. Benson, DD 421, and Hilary P. Jones, DD 427
were transferred to Taiwan China in 1954.

Rescinded Conversion
Two destroyers of this class were to have been converted to Corvettes (DDC) as prototypes for the conversion of the "Gleaves" and "Mayo" classes, Conversion plans provided for the removal of two boilers and the addition of a new sonar installation. But the conversions were rescinded,

Disposals
Of this class Caldwell, DD 605, was stricken on
1 May 1965, and Kendrick, DD 612, was stricken on
1 May 1966
The old destroyer Winslow, AG 127 (ex-DD 359),
of the "Selfridge" class, modified for radar picket
and experimental ordance testing, was stricken in Jan.
1958.

BAILEY BANCROFT BOYLE CHAMPLIN CHARLES F. HUGHES CAGHLAN FARENHOLT FRAZIER GANSEYOORT GILLESPIE	No. DD 492 DD 598 DD 600 DD 601 DD 428 DD 606 DD 491 DD 607 DD 608 DD 609	Bethlehem, Staten Island Bethlehem, Quincy Bethlehem, Quincy Bethlehem, Quincy Puget Sound Navy Yard Bethlehem, San Francisco Bethlehem, San Francisco Bethlehem, San Francisco Bethlehem, San Francisco Bethlehem, San Francisco	Laid down 29 Jan. 1941 20 May 1941 31 Dec. 1941 31 Jan. 1942 3 Jan. 1939 28 Mar. 1941 11 Dec. 1940 5 July 1941 16 June 1941	Launched 19 Dec. 1941 31 Dec. 1941 15 June 1942 25 July 1942 16 May 1940 16 Feb. 1942 19 Nov. 1941 17 Mar. 1942 11 Apr. 1942 8 May 1942	Completed 11 May 1942 30 Apr. 1942 15 Aug. 1942 12 Sep. 1942 18 Oct. 1940 10 July 1942 2 Apr. 1942 20 July 1942 25 Aug. 1942 16 Sep. 1942
GILLESPIE	DD 609	Bethlehem, San Francisco	16 June 1941	8 May 1942	16 Sep. 1942 18 Nov. 1942
HOBBY	DD 610	Bethlehem, San Francisco	30 June 1941 30 June 1941	4 June 1942 18 July 1942	17 Oct. 1942
KALK	DD 611	Bethlehem, San Francisco	1 May 1941	l June 1942	24 Oct. 1942
LAUB	DD 613	Bethlehem, San Pedro	29 May 1941	7 Sep. 1942	19 Dec. 1942
McLANAHAN	DD 615	Bethlehem, San Pedro Bethlehem, San Pedro	1 May 1941	27 June 1942	21 Nov. 1942
MACKENZIE	DD 614	Boston Navy Yard	19 Dec. 1938	20 Oct. 1939	6 Dec. 1940
MADISON	DD 425 DD 422	Bethlehem, Quincy	16 May 1938	26 Mar. 1940	18 Sep. 1940
MAYO	DD 602	Bethlehem, Staten Island	25 Mar. 1941	15 Feb. 1942	22 June 1942
MEADE	DD 603	Bethlehem, Staten Island	19 May 1941	29 Apr. 1942	25 July 1942
MURPHY	DD 616	Bethlehem, Quincy	15 June 1942	1 Oct. 1942	15 Jan. 1943
NIELDS	DD 617	Bethlehem, Quincy	25 July 1942	9 Nov. 1942	13 Feb. 1943
PARKER	DD 604	Bethlehem, Staten Island	9 June 1941	12 May 1942	29 Aug. 1942



MAYO (original appearance)

Added 1965, United States Navy, Official



Added 1966, United States Navy, Official

DESTROYER MINELAYERS (DM) Ex-Destroyers (DD)

10 "Smith" Class

Modified "Allen M Sumper" Class

Modified "A	Allen M. Sumner Class
Displacement:	2,250 tons standard (3,375 tons full load)
Dimensions:	$3761\times41\times19 \ (max.) \ \text{feet}$
Guns:	6—5 nch, 38 cal., 12—40 mm. AA., 11—20 mm. AA., (some
	were rearmed with 6-3 inch. 50 cal in place of 40 mm.)
Mines:	80 (capacity)
Machinery:	Geared turbines, 2 shafts. S.H.P.: 60,000=34 kts.
Boilers:	4 Babcock & Wolcox
Oil fuel:	650 tons
Radius:	6,000 mies at 15 kts.
Complement:	275 (15 oicers, 260 men). Accommodation for 22 officers, 300 men

	No.	Builders	Launched	Completed
ADAMS	DM 27 (ex-DD 739)	Bath Iron Works Corpn.	23 july 1944	10 Oct. 1944
GWIN	DM 33 (ex-DD 772)	Bethlehem, San Pedro	9 Apr. 1944	30 Sep. 1944
HARRY F. BAUER	DM 26 (ex-DD 738)	Bath Iron Works Corpn.	9 july 1944	22 Sep. 1944
HENRY A. WILEY	DM 29 (ex-DD 749)	Bethlehem, Staten Island	21 Apr. 1944	31 Aug. 1944
LINDSEY	DD 32 (ex-DD 771)	Bethlehem, San Pedro	5 Mar. 1944	20 Aug. 1944
ROBERT H. SMITH	DD 23 (ex-DD 735)	Bath Iron Works Corpn.	25 May 1944	4 Aug. 1944
SHANNON	DD 25 (ex-DD 737)	Bath Iron Works Corpn.	24 June 1944	8 Sep. 1944
SHEA	DD 30 (ex-DD 750)	Bethlehem, Staten Island	20 May 1944	30 Sep. 1944
THOMAS E. FRASER	DD 24 (ex-DD 736)	Bath Iron Works Corpn.	10 lune 1944	22 Aug. 1944
TOLMAN	DD 28 (ex-DD 740)	Bath Iron Works Corpn.	13 Aug. 1944	27 Oct. 1944
IORIGIA		•		

General

BAILEY

Modified Destoyers of the "Allen M. Sumner" class. Later fitted with tripod masts, All out of commission, in reserve.

Building

DM 23-28 were built by Bath Iron Works, DM 2930 by Bethlehem Steel Co., Staten Island, N.Y., and

DM 32-33 by Bethlehem Steel Co., San Pedro,
California.

Formerly classified as Light Minelayers (DM). Reclassified as Destroyer Minelayers (DM) in Feb. 1955. Photographs

rnotographs
A starboard broadside view of Harry F. Bauer appears in the 1957-58 to 1965-66 editions.
Disposals
J. Wm. Ditter, DM 31, and Aaron Ward, DM 24 were scrapped.



GUIDED MISSILE ESCORT SHIPS (DEG)

6 New Construction

2,643 tons standard (3,600 tons Displacement: full load)

Dimensions: Guided weapons:

A/S weapons:

Jobas tons standard (5,000 tons full load)

414½ (o.a.)×44×18 feet

1 single launcher aft for

"Tartar" surface-to-air missiles

1—5 inch, 38 cal. forward

ASROC 8-tube launcher forward,

2 triple ASW torpedo launchers

amidships, facilities for ASW

helicopter, DASH

Geared steam turbines. 1 shaft.

S.H.P.: 35,000=27 kts.

2 Foster Wheeler new super
charged steam generators

241 (16 officers, 225 men) Machinery: Boilers: Complement:

General

General

The first small ships of the destroyers escort type ever designed to carry guided missiles, Brooke, Ramsey and Schofield (cost \$28,500,000) were authorised in Fiscal Year 1962, and Julius A. Furer, Richard L. Page and Talbot (cost \$30,100,000) in 1963.

The newly developed steam generators are only half the weight of conventional boilers of the same capacity.

They permit greater speeds or increased gruising ranges.

the weight of conventional boilers of the same capacity. They permit greater speeds or increased cruising ranges without increasing the hull size. Same hull design and machinery as the conventionally armed escort ships of the "Garcia" class (see below): Combined "macks" instead of masts and stacks.

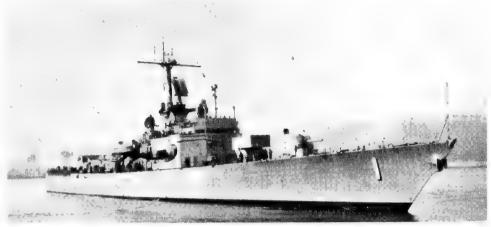
Fitted with a modified "Tartar" installation (44 missiles) and integral bow mounted sonar.

*Lockheed Shipbuilding and Construction Co. was formerly Puget Sound Bridge & Dry Dock Co.

DEG 6 was first named Furer, but in a matter of days was renamed Julius A. Furer on 5 Apr. 1966.

Two DEGs were requested by the Navy in Fiscal Year 1964, but were not authorised

Laid down 19 Dec. 1962 12 July 1965 4 Feb. 1963 4 Jan. 1965 15 Apr. 1963 4 May 1964 Builders
Lockheed S.B. & Constr. Co.*
Bath Iron Works Corpn.
Lockheed S.B. & Constr. Co.
Bath Iron Works Corpn.
Lockheed S.B. & Constr. Co.
Bath Iron Works Corpn. Launched
19 July 1963
22 July 1966
15 Oct. 1963
4 Apr. 1966
7 Dec. 1963
6 Jan. 1966 Completed Mar. 19 No. DEG 1 12 BROOKE BROOKE JULIUS A. FURER RAMSEY RICHARD L. PAGE SCHOFIELD DEG 6 DEG 2 DEG 5 DEG 3 TALBOT



BROOKE (Prototype Guided Missile Escort Ship)

1966, courtesy Mr. W.H. Davis

Commissioned

1965 1965

Launched

28 Apr. 4 Feb.

SHIPS New Large Anti-Submarine Type (DE) **ESCORT**

DE 1048 DE 1047

36 + 20 New Construction

2,624 tons standard (3,403 tons full load) 36 later ships 3,877 tons standard (4,100 tons full load) Displacement: load)
414½ (o.a.)×44×18 feet. 36
later ships 438×46½×24½ feet
2—5 inch, 38 cal. (single),
one forward, one aft
ASROC, DASH, 6 homing torpedo tubes (2 triple)
Westinghouse geared turbines.
1 shaft. S.H.P.: 35,000=27 kts.
Newly developed pressure fired
245 to 247 Dimensions: A/S weapons: Machinery:

Boilers: Complement:

General
Garcia and Bradley 1961 Programme, Edward McDonnell, Brumby and Davidson 1962 Programme, Cost \$26,700,000. Albert David, Koelsch, Sample, Voge and O'Callahan 1963 Programme. Ten more DEs in 1964 programme, 16 in the 1965 programme, 10 in 1966 programme, and 10 in the 1967 programme. The contract for the latter 20 DEs of the DE 1078 class was awarded to Avondale Shipyards, Incorporated, Westwego. Louisiana.

awarded to Avondale Shipyards, Incorporated, Westwego, Louisiana.

Designed for optimum performances in locating and destroying submarines. Integral bow mounted long range sonar, variable depth sonar, and gyro stabilizers. Improved seaworthiness and increased anti-submarine warfare capabilities over previous DEs, Flush deck, and radically raked stem. Combined mast and stack or "mack".

Builders Laid down
Lockheed S.B. & C. Co. 29 Apr. 1964
Bethlehem S. Francisco
Avondale Shipyards 1 Aug. 1963
Avondale Shipyards 30 Sep. 1963
Avondale Shipyards 1 Apr. 1963
Bethlehem S. Francisco
Todd, San Pedro
Defoe S.B. Co. 19 Feb. 1964
Todd, San Pedro 15 Sep. 1966
Todd, San Pedro 19 Feb. 1966
Todd, Saextle 2 Feb. 1966
Todd, Seattle 2 Feb. 1966
Todd, Seattle 2 Feb. 1966
Lockheed S.B. & C. Co. 19 July 1963
Defoe S.B. Co. 21 Nov. 1963 No. DE 1050 DE 1041 19 Dec. 26 Mar. 1964 1964 1964 1964 ALBERT DAVID 15 May 5 Aug. 7 Dec. 1044 1045 1043 1040 6 June 2 Oct. 15 Feb. 31 Oct. BRUMBY DAVIDSON 15 Feb. 21 Dec. EDWARD McDONNELL DE GARCIA HEPBURN KOELSCH DE 1963 DE 1040 DE 1055 DE 1049 DE 1052 DE 1058 DE 1051 DE 1053 8 June 12 Sep. KNOX MEYERCORD O'CALLAHAN ROARK 20 Oct. 1965

Also: Avondale Shipyards: DE 1056, 1059, 1061, 1068, 1072, 1075, 1977, 1078 to 1097

Lockheed S.B. & C. Co: DE 1057, 1063, 1065, 1069, 1073 Todd, San Pedro: DE 1060, 1067, 1071, 1074, 1076 Todd, Seattle: DE 1054, 1062, 1064, 1066, 1070.



GARCIA (prototype)

SAMPLE

1966



2 "Bronstein" Class

Displacement: 1,890 tons standard (2,650 tons

1,890 tons standard (and full load)
371½ (o.a.)×40½×18 feet
3—3 inch, 50 cal., (twin forward in gunhouse, single aft)
Rocket launcher (ASROC), 2
triple ASW torpedo launchers Dimensions: A/S weapons:

triple ASW torpeon launchers amidships Drone anti-submarine helicopter (DASH) carrying ASW torpedoes Steam turbines=26 kts. Foster-Wheeler supercharged Aircraft:

Machinery: Boiler

Complement:

DESTROYER ESCORTS (DE)

Builders Avondale Shipyards Inc. Avondale Shipyards Inc. Laid down 16 May 1961 15 Sep. 1961 Launched 31 Mar. 1962 9 June 1962 Completed DE 1037 DE 1038 **BRONSTEIN** 10 June 1963 19 Oct. 1963 McCLOY

General

General
An entirely new ocean convoy (anti-submarine) type.
Built under the Fiscal Year 1960 Programme. Light
displacement 1,640 tons.
DE Nos. 1039, 1042 and 1046 were assigned to
ships built under the off-shore Programme for Portugal.

Photographs

A photograph of Bronstein appears in the 1964-65 and 1965-66 editions, and another view of McCloy in the 1965-66 edition.



McCLOY

1966, Official (direct from Commanding Officer, U.S.S. McCloy)

4 "Claud Jones" Class

Displacement: 1,450 tons standard (1,750 tons 1,450 tons standard (1,750 tons full load)
312 (o.o.)×39×14½ feet
2—3 inch, 50 cal. d.p. AA. with forward 3 inch in gunhouse
2 hedgehog launchers forward, 6 torpedo tubes (2 triple)
4 F.M. diesels with reduction drive. 1 shaft. Speed=21 kts. Dimensions: A/S weapons:

Machinery:

Complement: 175

General

Claud Jones and John R. Perry were provided under the 1956 fiscal year appropriations and Charles Berry and McMorris under the 1957 programme. The latter two, originally ordered from American S.B. Co., Lorain, Ohio, were completed by Avondale Marime Ways. They embody new features including a unique upper deck arrangement, aluminium masts and deckhouse. Cruising range of 7,000 miles. Light displacement 1,315 tons.

Engineering
These ships have diesel propelling machinery, which cost less and have increased endurance, and two funnels instead of one as in the "Dealey" type.

Anti-Submarine Warfare

Charles Berry and McMorris were fitted with Norwegian designed "Terne III" arti-submarine missile launchers and system in 1961 at long Beach Naval Shipyard (removed in 1964).

Photographs

A port quarter oblique aerial view of Claud Jones appears in the 1959-60 and 1960-61 editions, and a port bow surface view in the 1964-65 edition.

Classification of DEs
Former Destroyer Escorts are now officially grouped under the generic heading of Patrol Ships with the specific classification of Escort Ships, but they approximate to the Frigate category in other navies,

Design Project
Bethlehem Steel Company, Quincy, and Gibbs and
Cox. Inc., New York City, each prepared for the
U.S. Navy a preliminary design for an advanced antisubmarine escort ship.

CLAUD JONES JOHN R. PERRY CHARLES BERRY McMORRIS

No. DE 1033 DE 1034 DE 1035

Builders
Avondale Marine Ways, Inc.
Avondale Marine Ways, Inc.
Avondale Marine Ways, Inc.
Avondale Marine Ways, Inc.

1 June 1957 1 Oct. 1957 29 Oct. 1958 5 Nov. 1958

Laid down

27 May 1958 29 July 1958 17 Mar. 1959 26 May 1959 10 Feb. 1959 5 May 1959 25 Nov. 1959 4 Mar. 1960

Completed

Launched



CLAUD JONES

Added 1965, United States Navy, Official



JOHN R. PERRY

1961, United States Navy, Official

ESCORT RESEARCH SHIP (AGDE)

I New Construction

3,426 tons (officially revised Displacement: figure) 414½×44 feet ASROC missil ASW DASH Dimensions: A/S weapons; Aircraft;

ASROC missile (amd DASH)
ASW DASH (Drone anti-submarine helicopter)
1—5 inch, 38 cal forward
Triple Guns:

Boilers: super-charged steam genera-

tors. Newly developed pressure fired 225 (14 officers, 211 men) Complement:

No. Builders
AGDE 1 (ex-AG 163) Bath Iron Works Builders GLOVER

General

An experimental hull of advanced hydrodynamic and propuls on design. To be used to obtain data for determining the optimum configuration for mounting sonar for best performance, and hydrodynamic and self-noise information unobtainable from model tests. Her radical propulsion system will consist of counter-rotating propellers emerging from an electric motor nacelle at the stem to reduce cavitation. It is expected that under normal search conditions it will be virtually free from propeller noises. Also firted with waterjet propulsion

Laid down Launched Completed 29 July 1963 17 Apr. 1965 13 Nov. 1965

system which eliminates propeller system. A long range moulded plastic sonar dome is built into the stem, and a variable depth sonar installation housed in the bottom of the ship. With this combination she is expected to be able to detect and track a submaine at great distances, regardless of its depth. Gyrosopically controlled fin stabilisers to reduce rolling. This ship was originally authorised in the 1960 program but was postponed and re-introduced into the 1961 program. Cost \$29,330,000. Similar in appearance to "Garcia" class DEs.

Rated as Escort Ships (DE)

5 "Dealey" and 8 "Evans" Classes

1,450 tons standard (1,914 tons full load)
314\(\frac{1}{2}\) (0.a.)\(\times 36\(\frac{1}{2}\)\)\ 13\(\frac{1}{4}\) feet
4-3 inch, 50 cal., d.p. (2 twin)
Weapon Alpha, 6 homing torpedo
tubes (2 triple), DASH in some
De Laval geared turbine. 1 shaft.
S.H.P.: 20,000=25 kts.
2 Foster Wheeler
400 tons
4,500 miles at 15 kts.
"Dealy" class 149 (9 officers,
140 men), "Evans" class 170
(11 offices, 159 men) 1,450 tons standard (1,914 tons Displacement: Dimensions: Guns: A/S weapons: Machinery: Boilers-Oil fuel: Radius: Complement:

General (11 omces, 159 men)

Dealey was the prototype for the first post-war antisubmarine vessels. Lavishly equ'pped with electronic
gear. Designed specifically for fast convoy work and
constructed so that in the event of war similar destroyer-escorts could be built rapidly. Single engine
room. Single screw. Twin rudders. All aluminium
superstructure saving 40 per cent in weight. 1,280
tons light displacement.

Dealey originally had an open twin 3 inch. 50 cal. mount forward, and she was fitted with 2 British Squids. All ships now have the forward 3 inch mount in a gunhouse. After 3 inch in DE 1024, 1030 and others replaced by DASH installation in 1965.

Photographs

A large port bow aerial view of Hooper and a broad side view of Dealey appear in the 1958-59 edition, a port bow view of Hammerberg in the 1957-58 to 1959-60 editions, a starboard broadside view of Bauer in the 1958-59 to 1960-61 editions, a port bow oblique aerial view of John Willis showing variable depth gear on the stern in the 1960-61 to 1963-64 editions, and a starboard bow oblique aerial view of Hooper in the 1959-60 to 1964-65 editions.

The first five ships in the table are known as the Dealey'' class and the later eight as the "Evans" class "Dealey"

Destroyer Escorts-contd.

	No.	Builders	Laid down	Launched	Completed
CROMWELL	1014	Bath Iron Works Corpn	3 Aug. 1953	4 June 1954	24 Nov. 1954
DEALEY	1006	Bath Iron Works Corpn	15 Oct. 1952	8 Nov 1953	3 June 1954
HAMMERBERG	1015	Bath Iron Works Corpn	12 Nov 1953	20 Aug. 1954	28 Feb 1955
COURTNEY	1021	Defoe S.B. Co., Bay City	2 Sep. 1954	2 Nov. 1955	31 Aug. 1956
LESTER	1002	Defoe S.B. Co., Bay City	2 Sep. 1954	5 Jan. 1956	14 June 1957
EVANS	1023	Puget Sound B. & D. Co	8 Apr. 1955	14 Sep. 1955	14 June 1957
JOHN WILLIS	1027	New York S.B. Corpn.	5 July 1955	4 Feb. 1956	21 Feb. 1957
VAN VOORHIS	1028	New York S.B. Corpn.	29 Aug. 1955	28 July 1956	15 Apr. 1957
BRIDGET	1024	Puget Sound B. & D. Co	19 Sep. 1955	25 Apr. 1956	24 Oct. 1957
HARTLEY	1029	New York S.B. Corpn.	31 Oct. 1955	24 Nov. 1956	30 July 1957
HOOPER	1026	Bethlehem, Pacific Coast	4 Ian. 1956	1 Aug. 1957	16 Apr. 1958
J. K. TAUSSIG	1030	New York S.B. Corpn.	3 Jan. 1956	3 Jan. 1957	10 Sep. 1957
BAUER	1025	Bethlehem, Pacific Coast	1 Dec. 1956	4 June 1957	22 Nov. 1957



HARTLEY ("Evans" Class)

Added 1964



HAMMERBERG ("Dealey" Class)

1965, Wright & Logan

Rated as

Escort Ships, Radar Picket (DER)

2 Converted "John C. Butler" Class

Displacement: Dimensions:

Guns: A-S weapons

Machinery: Boilers: Oil fuel: Radius: Complement: 1,260 tons light, 1,745 tons standard (2,100 tons full load) 306 (o.a.)×363×11 (max.) feet 2—5 inch, 38 cal. d.p. Hedgehogs and 2 torpedo launchers Westinghouse geared turbines. 2 Hafts. S.H.P.: 12,000 24 kts. 2 Babcock & Wilcox water tube 340 tons 5,000 miles at 15 kts 187

General Launched as destroyer escorts (DEs), suspended in August 1946, and completed as Radar Picket Escort Vessels (DERs) at Boston Naval Shipyard.

Engineering
These two ships are the only steam driven DERs among all the Radar Picket Destroyer Escorts.

VANDIVIER WAGNER

No. DER 540 DER 539

Builders Boston Naval Shipyard Boston Naval Shipyard Laid down 3 Nov. 1943 3 Nov. 1943

Launched 27 Dec. 1943 27 Dec. 1943

Completed 1 Dec. 1955 31 Dec. 1955



WAGNER

United States Navy, Official

Destroyer Escorts-contd.

Rated as **Escort Ships** (DE)

17 "Rudderow" Class

Displacement:	1,450 tons standard (2,230 tons full load)
Dimensions:	306 (o.a.)×37×14 feet
Guns:	2-5 inch. 38 cal., 4-40 mm.
	AA., 6-20 mm. AA. (De Long
	10-40 mm, AA.)
A/S weapons:	Hedgehog (see Anti-submarine
	notes below)
Machinery:	G.E. geared turbines. Turbo-
-	electric drive. 2 shafts, S.H.P.:
	12,000=24 kts.
Boilers:	2 water tube. Foster-Wheeler in
	DE 579-589, Babcock & Wilcox
	in DE 224, 225. Combustion
	Engineering in remainder
Oil fuel:	378 tons
Radius:	5,000 miles at 15 kts.
Complement:	180 (accommodation for 220)

62 ships of this type were built. Originally rated as Destroyers Escorts (DE) but now grouped under the generic heading of Patrol Ships (Escort Ships).

Anti-Submarine

Many of the ships have trainable hedgehogs mounted forward, particularly those in use as reserve training ships. Coates has K-guns and torpedo launchers in addition.

Torpedo Tubes
The original 3—21 inch torpedo tubes were removed.

Disposals Disposals Chaffee (DE 230) was scrapped, DE 226-229, 232-237, 590-606, 687-692, 710-722 were converted into Fast Transports (APD). Daniel A. Joy, DE 585, was stricken on 15 May 1965, and George A. Johnson, DE 583, on 1 Nov. 1965.

Training
Parle, DE 708, is a Great Lakes naval reserve training ship,

Photographs
A larger port bow view of Parle appears in the 1962-63 to 1965-66 editions.

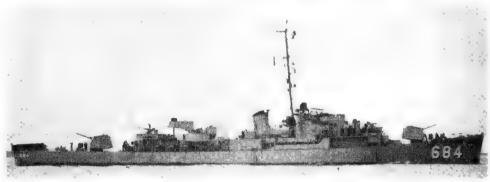
Transfers
Holt, DD 706, was transferred to the Korean Navy in 1963.

	No.	Builders	Launched	Completed
CHARLES H. KIMMEL	DE 584	Bethlehem-Hingham	15 Jan. 1944	20 Apr. 1944
COATES	DE 685	Bethlehem, Quincy	9 Dec. 1943	24 Jan. 1944
DE LONG	DE 684	Bethlehem, Quincy	23 Nov. 1943	31 Dec. 1944
DAY	DE 225	Philadelphia Navy Yard	14 Oct. 1943	10 June 1944
EUGENE E. ELMORE	DE 686	Bethlehem, Quincy	23 Dec. 1943	4 Feb. 1944
HODGES	DE 231	Charleston Navy Yard	9 Dec 1943	27 May 1944
IOBB	DE 707	Defoe S.B. & Co., Bay City	4 Mar. 1944	4 July 1944
LESLIE L. B. KNOX	DE 580	Bethlehem-Hingham	8 Jan. 1944	22 Mar. 1944
LOUGH	DE 586	Bethlehem-Hingham	22 Jan. 1944	2 May 1944
McNULTY	DE 581	Bethlehem-Hingham	8 lan. 1944	31 Mar. 1944
METIVIER	DE 582	Bethlehem-Hingham	12 Jan. 1944	7 Apr. 1944
PARLE	DE 708	Defoe S.B. & Co., Bay City	25 Mar. 1944	29 July 1944
PEIFFER	DE 588	Bethlehem-Hingham	26 Jan. 1944	15 June 1944
RILEY	DE 579	Bethlehem-Hingham	29 Dec 1943	13 Mar. 1944
RUDDEROW	DE 224	Philadelphia Navy Yard	14. Oct. 1943	15 May 1944
THOMAS F. NICKEL	DE 587	Bethlehem-Hingham	22 Jan. 1944	9 June 1944
TINSMAN	DE 589	Bethlehem-Hingham	29 Jan 1944	26 June 1944



DE LONG

United States Navy, Official



DE LONG (Broadside silhouette)

courtesy B. L. Devenish-Meares, Esq.,

Launched

28 Dec. 1943 9 Jan. 1943 6 Feb. 1943 30 Dec. 1943

Rated as **Escort Ships** (DE, ex-DER)

4 Converted "Buckley" Class

Distance	1 400
Displacement:	1,400 tons standard (2,170 tons full load)
Dimensions:	306 (o.a.) \times 37 \times 14 feet
Guns:	2-5 inch, 38 cal. d.p., 8-40 mm. AA.
Machinery:	G.E. turbines, electric drive, 2 shafts, S.H.P.: 12,000=24 kts.
Boilers:	2 water tube. Babcock & Wilcox in Reuben James, Foster Wheeler in remainder
Oil fuel:	340 tons
Radius:	5,000 miles at 15 kts.
Complement:	185 (accommodation for 220)

Complement: 185 (accommodation for 220)
General
Built as Destroyer Escorts (DE) with 3—3 inch guns.
Subsequently grouped under the generic heading of
Patrol Vessels with the sub-classification, Escort Vessels,
Converted and reclassified as "Escort Vessels, Radar
Picket" (DER) in 1949-50, but in Oct. 1954 again
reclassified as Escort Vessels (DE) and on 25 Aug.
1960 reclassified as Escort ships (DE).
Disposals
Fogg, DE 57, was stricken on 10 Apr., 1965, and
Spangenburg, DE 223, and William T. Powell on 1
Nov. 1965. Alexander J. Luke and Reuben James
are to be disposed of.

	No.	Builders
LEXANDER J. LUKE	DE 577	Bethlehem-Hingham
UCKLEY	DE 51	Bethlehem-Hingham
EUBEN JAMES	DE 153	Norfolk Naval Shipyard
OBERT I. PAYNE	DE 578	Bethlehem-Hingham
		-



Converted "Buckley" Class

Ted Stone

Completed

19 Feb. 1944 30 Apr. 1944 1 Apr. 1943 28 Feb. 1944

Rated as Escort Ships (DE)

67 "John C. Butler" Class

1,350 tons standard (2,100 tons full load)
306 (o.a.)×37×11 feet
2—5 inch, 38 cal., 2—40 mm. Displacement: Dimensions: Guns: 2—5 inch, 38 cal., 2—40 mm. AA.

1 or 2 hedgehogs, D.C.T.
Westinghouse or G.E. geared turbines. 2 shafts. S.H.P.: 12,000=24 kts.

2 water tube (Combustion Engreering or Babcock & Wilcox) 340 tons
5,000 miles at 15 kts.

190 (accommodation for 220) A/S weapons: Machinery: Boilers: Oil fuel: Radius: Complement:

General

General
Originally rated as Destroyer Escort (DE), but re-rated as Escort Ships (DE).
Torpedo Tubes
The original 3—21 inch torpedo tubes were removed

Anti-Submarine Warfare
Alvin C. Cockrell has a trainable hedgehog forward,
in "B" position. Two ships, Lewis and Tweedy, were
converted to anti-submarine escorts, Lewis had two
hedgehogs forward, in "B" position.

The completion of Vandivier and Wagner of this class was suspended in Aug. 1946; but under the 1954 Fiscal Year Conversion Programme these two ships were completed as radar picket escort vessels (DER) at Boston Naval Shipyard (see previous page).

Gunnery
The 6-20 mm. AA, guns in most ships have been or are being removed.

Photographs
A port oblique aerial view of Maurice J. Manuel (with mainmast) and a port broadside surface view of Rizzi appear in the 1954-55 to 1957-58 editions, a port oblique aerial view of Raymond in the 1957-58 and 1958-59 editions, a port bow surface view of Tweedy in the 1957-58 to 1961-62 editions, and a port bow oblique aerial view of Lewis (showing two hedgehogs in "B" Position) in the 1959-60 to 1964-65 editions, a port bow oblique aerial view of Alvin C. Cockerill showing trainable hedgehog in the 1959-60 to 1965-66 editions, and a port bow oblique aerial view of Thaddeus Parker in the 1965-66 edition.

Of this class, Formoe, DE 509, and McCoy Reynolds, DE 440, were loaned to Portugal on 7 Feb. 1957 for five years, and the loan was renewed in 1962 for the same term.

Disposals
The incomplete Oswald A. Powers, DE 542, and Sheeham, DE 541, of this class were scrapped. Woodson, DE 359, was stricken on 1 July 1965, Douglas A Munro, DE 422, on 1 Dec. 1965 (expended, used as a target vessel), Ulvert M. Moore, DE 442, on 1 Dec. 1965 (and expended as a target off San Diego in July 1966), Lewis, DE A/S 535, and Naifeh, DE 352 on 1 Jan. 1966 (expended as targets off San Diego on 21 Apr. 1966 and in July 1966, respectively) and Heyliger, DE 510, Maurice J. Manuel, DE 351, and Straus, DE 408, on 1 May 1966.

Casualties
Second World War losses: Eversole, DE 404, Oberrender, DE 344, Samuel B. Roberts, DE 413, and
Shelton, DE 407.

Destroyer Escorts-contd.

Descroyer	1300103	conta.				
	No.	Builders	Launche		Compl	
ABERCROMBIE	DE 343	Consolidated Steel Corpn., Orange	14 Jan.	1944	I May	
ALBERT T. HARRIS	DE 447	Federal S.B. & D.D. Co., Pt. Newark	16 Apr.	1944	29 Nov.	1944
ALVIN C. COCKRELL	DE 366	Consolidated Steel Corpn., Orange		1944	7 Oct.	
BIVIN	DE 536	Boston Naval Shipyard		1943		1944
CECIL J. DOYLE	DE 368	Consolidated Steel Corpn., Orange		1944	16 Oct.	1944
CHARLES E. BRANNON		Federal S.B. & D.D. Co., Pt. Newark		1944	1 Nov.	1944
CHESTER T. O'BRIEN	DE 421	Brown S.B. Co., Houston		1944	3 July	1944
		Federal S.B. & D.D. Co., Pt. Newark		1944	21 Apr.	1944
CONKLIN	DE 439	rederal S.B. & D.D. Co., Pt. Newark				
CORBESIER	DE 438	Federal S.B. & D.D. Co., Pt. Newark		1944	31 Mar	1944
CROSS	DE 448	Federal S.B. & D.D. Co., Pt. Newark		1944	8 Jan.	1945
DENNIS	DE 405	Brown S.B. Co., Houston		1943	20 Mar	1944
DOYLE C. BARNES	DE 353	Consolidated Steel Corpn., Orange	4 Mar		13 July	1944
	DE 423	Brown S.B. Co., Houston	9 Mar.	1944	21 July	1944
DUFILHO EDMONDS	DE 406	Brown S.B. Co., Houston	17 Dec	1943	3 Apr.	1944
EDWARD H. ALLEN	DE 531	Boston Naval Shipyard		1943	16 Dec.	1943
EDWIN A. HOWARD	DE 346	Consolidated Steel Corpn., Orange		1944	25 May	1944
FRENCH	DE 367	Consolidated Steel Corpn., Orange	17 June		9 Oct.	1944
GENTRY	DE 349	Consolidated Steel Corpn., Orange		1944	14 June	1944
	DE 357	Consolidated Steel Corpn., Orange		1944	II Aug.	1944
GEORGE E. DAVIS	DE 508	Federal S.B. & D.D. Co., Pt. Newark		1944	12 May	1944
GILLIGAN		Federal S.B. & D.D. Co., Pt. Newark	19 Mar.			1944
GOSS	DE 444					
GRADY	DE 445	Federal S.B. & D.D. Co., Pt. Newark	2 Apr.		11 Sep.	1944
HAAS	DE 424	Brown S.B. Co., Houston	20 Mar.		2 Aug.	1944
HANNA	DE 449	Federal S.B. & D.D. Co., Pt. Newark		1944	27 Jan.	1945
HOWARD F. CLARK	DE 533	Boston Naval Shipyard	8 Nov	1943	25 May	1944
JACCARD	DE 355	Consolidated Steel Corpn., Orange	18 Mar.		26 July	1944
JACK MILLER	DE 410	Brown S.B. Co., Houston	10 Jan	1944	13 Apr	1944
JESSE RUTHERFORD	DE 347	Consolidated Steel Corpn., Orange	29 Jan.	1944	31 May	1944
JOHN C. BUTLER	DE 339	Consolidated Steel Corpn., Orange	11 Dec.	1943	31 Mar.	1944
JOHN L. WILLIAMSON	DE 370	Consolidated Steel Corpn., Orange	29 Aug.	1944	31 Oct	1944
JOHNNIE HUTCHINS	DE 360	Consolidated Steel Corpn., Orange		1944	28 Aug.	1944
JOSEPH E. CONNOLLY	DE 450	Federal S.B. & D.D. Co., Pt. Newark	6 Aug.		28 Feb.	1945
KENDALL C. CAMPBELL	== :::=	Federal S.B. & D.D. Co., Pt. Newark		1944	31 July	1944
KENNETH M. WILLETT	DE 354	Consolidated Steel Corpn., Orange		1944	19 July	1944
KEY	DE 348	Consolidated Steel Corpn., Orange		1944	5 June	1944
	DE 409	Brown S.B. Co., Houston				1944
LA PRADE		Brown S.B. Co., Houston		1943	20 Apr.	
LAWRENCE C. TAYLOR		Brown S.B. Co., Houston		1944	13 May	1944
LE RAY WILSON	DE 414			1944	10 May	1944
LELAND E. THOMAS	DE 420	Brown S.B. Co., Houston		1944	19 June	1944
LLOYD E. ACREE	DE 356	Consolidated Steel Corpn., Orange	21 Mar. 1		1 Aug.	1944
MACK	DE 358	Consolidated Steel Corpn., Orange	11 Apr. 1			1944
MELVIN R. NAWMAN	DE 416	Brown S.B. Co., Houston	7 Feb. 1	1944		1944
McGINTY	DE 365	Consolidated Steel Corpn., Orange	5 Aug. 1	1944	25 Sep.	1944
O'FLAHERTY	DE 340	Consolidated Steel Corpn., Orange	14 Dec. 1	1944	8 Apr.	1944
OLIVER MITCHELL	DE 417	Brown S.B. Co., Houston	8 Feb. 1	1944	14 June	1944
OSBERG	DE 538	Boston Naval Shipyard	7 Dec. 1	1943	17 Dec.	1945
PRATT	DE 363	Consolidated Steel Corpn., Orange	1 June 1	1944	18 Sep.	1944
PRESLEY	DE 371	Consolidated Steel Corpn., Orange	19 Aug. 1		7 Nov.	1944
RAYMOND	DE 341	Consolidated Steel Corpn., Orange		1944	15 Apr.	1944
RICHARD M. ROWELL	DE 403	Brown S.B. Co., Houston	17 Nov 1			1944
RICHARD S. BULL	DE 402	Brown S.B. Co., Houston	16 Nov. 1			1945
RICHARD W. SUESENS	DE 342	Consolidated Steel Corpn., Orange		944		1944
RIZZI	DE 537	Boston Naval Shipyard		1943		1944
ROBERT BRAZIER	DE 345	Consolidated Steel Corpn., Orange		1944		1944
	DE 419	Brown S.B. Co., Houston				1944
ROBERT F. KELLER	DE 362	Consolidated Steel Corpn., Orange		1944		
ROLF	DE 364	Consolidated Steel Corpn., Orange		1944		1944
ROMBACH				1944		1944
SILVERSTEIN	DE 534	Boston Naval Shipyard	8 Nov. 1			1944
STAFFORD	DE 411	Brown S.B. Co., Houston		1944		1944
TABBERER	DE 418	Brown S.B. Co., Houston	18 Feb. 1	1944		1944
THADDEUS PARKER	DE 369	Consolidated Steel Corpn., Orange	26 Aug. 1	944		1944
TRAW	DE 350	Consolidated Steel Corpn., Orange	14 Feb. 1	1944	20 June	1944
TWEEDY	DE 532	Boston Naval Shipyard		943	12 Feb.	1944
WALTER C. WANN	DE 412	Brown S.B. Co., Houston		1944		1944
WALTON	DE 361	Consolidated Steel Corpn., Orange		944		1944
WILLIAM SEIEVERLING	DE 441	Federal S.B. & D.D. Co., Pt. Newark		944	1 June	
WILLIAMS	DE 372	Consolidated Steel Corpn., Orange	22 Aug. 1		11 Nov.	
			~~ '	, , ,		



RAYMOND

Skyfotos



RIZZI

Wright & Logan

	No.
COOLBAUGH	DF 217
CRONIN	DE 704
CURRIER	DE 700
DAMON M. CUMMINGS	DE 643
DARBY	DE 218
EARL V. JOHNSON	DE 702
EICHENBERGER	DE 202
FIEBERLING	DE 640
FRANCIS M. ROBINSON	
FRYBARGER	DE 220 DE 705
GENDREAU	DE 639
GEORGE	DE 697
GILLETTE	DE 681
GREENWOOD	DE 679
GUNASON	DE 795
HENRY R. KENYON	DE 683
HOLTON	DE 703
JACK W. WILKE	DE 800
JAMES E. CRAIG	DE 201
J. DOUGLAS BLACKWOOD	DE 219
LOESER	DE 680
LOYELACE	DE 198 DE 796 DE 199
MAJOR	DE 796
MANNING	DE 199
MARSH	DE 699
NEUNDORF	DE 200
OSMUS	DE 701
OTTER	DE 210
PAUL G. BAKER	DE 642
RABY	DE 698
SPANGLER	DE 696
THOMASON	DE 203
VAMMEN	DE 644
VARIAN	DE 798
WEEDEN	DE 797
WHITEHURST	DE 634
WILLIAM C. COLE	DE 641
WILLMARTH	DE 638
WISEMAN	DE 667

Rated as Escort Ships (DE)

39 "Buckley" Class

	Buckley Class
Displacement:	1,400 tons standard (2,170 tons full load)
Dimensions: Guns:	306 (o.a.)×37×14 feet 3—3 inch. 50 cal., 8—40 mm. AA. (Some have 2—5 'nch. 38
A/S weapons:	cal.) see Gunnery 2 triple torpedo tubes in reserve

2 triple torpedo tubes in reserve training ships. Some have trainable hedgehog in "B" position G.E. geared turbines, electric drive, 2 shafts. S.H.P.: 12,000 =24 kts.
2 water tube (Foster-Wheeler, Babcock & Wilcox, or Combustion Engineering) 340 tons 5,000 miles at 15 kts. 180 (accommodation for 220) Machinery:

Boilers:

Oil fuel: Radius; Complement;

General
46 ships of this class were transferred in 1944
under Lend-Lease to the Royal Navy in which they
served as frigates, Six of these were lost, and the
rmainder returned to U.S.A. for scrapping, Fifty
more of the "Buckley" class were adapted as Fast
Transports. Marsh, Wiseman and Whitehurst, as power
supply ships, have two large reels for power cables
amidships. Fechteler and Underhill were lost in the
Second World War. Solar was destroyed by internal
explosion on 30 Apr. 1946.
Engineering

Engineering
All DEs have alternate engine and boiler rooms. What looks like a central uptake is really only a cylindrical support for the dual stack trunk.

Cronin, Frybarger and Raby were redesignated DEC Cronin, Frybarger and Raby were redesignated DEC (escort vessels, control) on reassignment to amphibious forces, but Cronin and Raby were decommissioned to the Reserve Fleet in June 1953, and Frybarger was placed in the Reserve Fleet in Jun 1954; all three of these DECs were reclassified as DEs on 27 Dec. 1957. Experimental

Vammen was converted for anti-submarine warfare.

Vammen was converted for anti-submarine warrare.

Maloy was rated as EDE (experimental destroyer escort)
until she was decommissioned and stricken in 1965.

Francis Robinson and Jack W. Wilkie were also EDEs
until 1960 when they were decommissioned.

Conversion
Seven of this class were converted to R. (see previous page) but reverted to DE.

Gunnery
Coolbaugh, Currier, Darby, George, Greenwood,
Harmon, J. Douglas Blackwood, Loeser, Osmus, Raby
and Spangler have 5 inch guns.

Photographs
A transom view of Maloy, with experimental gear on the stern, appears in the 1957-58 edition, a starboard bow view of Loeser in the 1958-59 edition, a starboard broadside view of Darby in the 1955-56 to 1961-62 editions, a port quarter aerial oblique view of Vammen in the 1957-58 to 1961-62 editions, a port bow oblique aerial view of Vammen in the 1959-60 to 1961-62 editions, a starboard dead broadside surface view of Coolbaugh in the 1955-56 to 1963-64 editions, and a port bow surface view of Frybarger in the 1957-58 to 1965-66 editions.

Disposals Photographs

Disposals
Ahrens, DE 575, Borum, DE 790, Foreman, DE 633,

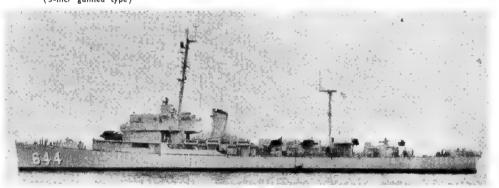
Destroyer Escorts-contd.

Builders	Launched	Completed
Philadelphia Navy Yard	29 May 1943	15 Oct 1943
Defoe Co., Bay City, Mich.	5 Jan. 1944	4 May 1944
Defoe Co., Bay City, Mich.	14 Oct. 1943	1 Feb. 1944
Bethlehem, San Francisco	18 Apr. 1944	29 June 1944
Philadelphia Navy Yard	29 May 1943	15 Nov. 1943
Defoe Co., Bay City, Mich.	12 Jan. 1944	18 Mar, 1944
Charleston Navy Yard	22 July 1943	17 Nov. 1943
Bethlehem, San Francisco	2 Mar. 1944	11 Apr. 1944
Philadelphia Navy Yard	29 May 1943	15 Jan. 1944
Defoe Co., Bay City, Mich.	25 Jan 1944	18 May 1944
Bethlehem, San Francisco	12 Dec. 1943	17 Mar. 1944
Defoe Co., Bay City, Mich.	16 Feb. 1943	20 Nov 1943
Bethlehem, Quincy	25 Sep. 1943	27 Oct. 1943
Bethlehem Co., Quincy	21 Aug. 1943	25 Sep. 1943
Consolidated Steel Corpn., Orange	17 Oct. 1943	1 Feb. 1944
Bethlehem, Quincy	30 Oct. 1943	30 Nov. 1943
Defoe Co., Bay City, Mich.	15 Dec. 1943	1 May 1944
Consolidated Steel Course Orenza		7 Mar. 1944
Consolidated Steel Corpn., Orange Charleston Navy Yard	22 July 1943	1 Nov. 1943
	29 May 1943	15 Jan. 1943
Philadelphia Navy Yard	11 Sep. 1943	10 Oct. 1943
Bethlehem, Quincy	4 July 1943	7 Nov. 1943
Norfolk Navy Yard	23 Oct. 1943	12 Feb 1944
Consolidated Steel Corpn., Orange	1 Sep. 1943	1 Oct. 1943
Charleston Navy Yard Defoe Co., Bay City, Mich.		12 Jan, 1944
Charleston Name Yand		18 Oct 1943
Charleston Navy Yard		23 Feb. 1944
Defoe Co., Bay City, Mich.	4 Nov. 1943 23 Oct. 1943	21 Feb. 1944
Charleston Navy Yard		25 May 1944
Bethlehem, San Francisco	12 Mar. 1944	7 Dec. 1943
Defoe Co., Bay City, Mich.		31 Oct. 1943
Defoe Co., Bay City, Mich.	15 July 1943	10 Dec, 1943
Charleston Navy Yard	24 Aug. 1943	27 July 1944
Compelidated Steel Comm. Ones	21 May 1944	27 July 1744 29 Feb. 1944
Charleston Navy Fard Bethlehem, San Francisco Consolidated Steel Corpn., Orange Consolidated Steel Corpn., Orange	6 Nov. 1943	19 Feb. 1944
admitted action delibring artinge	21 000 1743	
bethienem, ban francisco	5 Sep. 1743	19 Nov. 1943
Bethlehem, San Francisco	28 Dec. 1943	12 May 1944
Bethlehem, San Francisco	21 Nov. 1943	13 Mar. 1944
Dravo Corpn., Pittsburgh	6 Nov. 1943	4 Apr. 1944



J. DOUGLAS BLACKWOOD (5-inch gunned type)

May 1965, Philadelphia, courtesy Dr. Ian S. Pearsall



VAMMEN (with mainmast)

1962, courtesy Mr. W. H. Davis



FRANCIS M. ROBINSON (3 inch gunned type)

1960, courtesy Mr. James Flynn

Flower, DE 222, Harmon, DE 678, Maloy, DE 791, Scott, DE 214, and Scroggins, DE 799, were stricken im 1965.

Durlk, DE 666, was stricken on 1 June 1965, Foss, DE 59, on 1 Nov. 1965, and Jenks, DE 665, on 1 Feb.

Destroyer Escorts—contd.

Rated as Escort Ships (DE)

43 "Edsall" Class

Displacement:	1,200 tons standard (1,850 tons
	full load)
Dimensions:	306 (o.a.)×37×11 feet
Guns:	3-3 inch, 50 cal., 8-40 mm.
	AA 4-20 mm. AA.
A/S weapons:	Trainable Hedgehog and 2 tor-
	pedo rack side launchers in some
	ships. Considerable variations
	in the class. See broadside view
	of Snowden below which shows
	6 ASW torpedo tubes in 2
	triple mounts abaft the funnel
Machinery:	4 Fairbanks-Morse diesels. 2
riacilitory.	shafts. B.H.P.: 6.000=21 kts.
Oil fuel:	279 tors
Radius:	
	11,500 miles at 11 kts.
Complement:	149 (accommodation for 200)

General
Fessenden, Harveson, Joyce, Kirkpatrick, Otterstetter and Strickland of this class were converted to DER (Radar Picket Escort Vessels) in 1951. Haverfield, Pillsbury, Savage, and Wilhoite were converted to DER in 1954-55, Calcaterra, Chambers, Falgout, Kainer, Lowe and Rhodes were converted to DER in 1955-56, Brister, Camp, Durant, Finch, Forster, Hissem, Kretchmer, Lansing, Price, Roy O'Hale, Silstrom and Vance were converted to DER under the 1956 conversion programme. Six others were converted to DER under the Fiscal 1957 conversion programme (see next page). Falgout, Finch, Forster, Koiner, Lowe and Newell, transferred to the Coast Guard in 1951 and Chambers, Durant, Lansing, Ramsden, Richey, Vance in 1952, were returned to the Navy in 1954. War losses: Fiske, Frederick C. Davis, Holder Leopold.

Experimental
The conversion programme for 1955 provided for replacing the diesel engines in the escort vessel Mills (DE 383) with two British RM 60 gas turbines designed to reduce plant weight by approximately 15 per cent, while delivering 67 per cent more power; but this project was abandoned and Mills was converted to DER (Radar Picket).

Anti-Submarine

Peterson was converted (see previous editions) for specialised anti-submarine warfare, that is limited conversion with additional sonar and depth charge equipment added. She recommissioned after conversion on 1 May 1952. She was decommissioned in 1965.

Torpedo Tubes

The original 3-21 inch torpedo tubes were removed.

Conversion

Conversion
The following vessels were redesignated from DE to DER and converted under the Fiscal Year 1957 Shipbuilding and Conversion Programme:
Blair DE 147 to DER 147, Mills DE 383 to DER 383, Newell DE 322 to DER 322, Ramsden DE 382 to DER 382, Sturtevant DE 239 to DER 239, Thomas J. Gary DE 326 to DER 326. The conversion was carried out during 1956-58.

28 ships of this class were converted to Radar Pickets earlier, see full list under Converted "Edsall" class on following page.

Photographs

A port bow near broadside aerial view of Peterson as converted for anti submarine warfare appears in the 1954-55 to 1965-66 editions, and a bow oblique aerial view of Snowden in the 1956-57 to 1965-66 editions.

Disposals

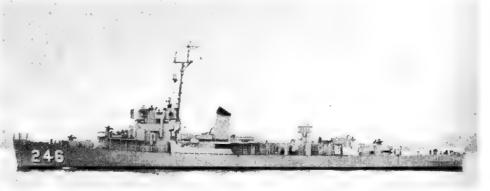
Fisherty, DE 135, and Frost, DE 144, were stricken on 1 Apr. 1965. Brough, DE 148, was stricken on 1 Nov. 1965. Tomich, DE 242, is also to be disposed of in the near future.

	No.	Builders	Launched	Completed	
CHATELAIN	DE 149	Consolidated Steel Corpn.	21 Aug. 1943	22 Sep. 1943	
COCKRILL	DE 398	Brown S.B. Co., Houston	29 Oct 1943	24 Dec. 1943	
DALE W. PETERSEN	DE 337	Consolidated Steel Corpn.	22 Dec. 1943	17 Feb. 1944	
DANIEL	DE 335	Consolidated Steel Corpn.	16 Nov, 1943	24 Jan. 1943	
DOUGLAS L. HOWARD	DE 138	Consolidated Steel Corpn.	25 Jan. 1943	29 July 1943	
EDSALL	DE 129	Consolidated Steel Corpn.	1 Nov. 1942	10 Apr. 1943	
FARQUHAR	DE 139	Consolidated Steel Corpn.	13 Feb. 1943	5 Aug. 1943	
HAMMAN (ex-Langley)	DE 131	Consolidated Steel Corpn.	13 Dec. 1942	17 May 1943	
HERBERT C. JONES	DE 137	Consolidated Steel Corpn.	19 Jan. 1943	21 July 1943	
HILL	DE 141	Consolidated Steel Corpn.	28 Feb. 1943	16 Aug. 1943	
HOWARD D. CROW	DE 252	Brown S.B. Co., Houston	26 Apr. 1943	27 Sep. 1943	
HURST	DE 250	Brown S.B Co., Houston	14 Apr. 1943	30 Aug 1943	
HUSE	DE 145	Consolidated Steel Corpn.	23 Mar. 1943	30 Aug 1943	
INCH	DE 146	Consolidated Steel Corpn.	4 Apr. 1943	8 Sep. 1943	
JACOB JONES	DE 130	Consolidated Steel Corpn.	29 Nov. 1942	29 Apr. 1943	
IANSSEN	DE 396	Brown S.B. Co., Houston	10 Oct. 1943	18 Dec. 1943	
I. RICHARD WARD	DE 243	Brown S.B. Co., Houston	6 Jan. 1943 7 Mar. 1943	5 July 1943	
J. R. Y. BLAKELEY	DE 140	Consolidated Steel Corpn.		16 Aug. 1943	
KEITH	DE 241	Brown S.B Co., Houston	21 Dec. 1942	19 July 1943	
MARCHAND	DE 249	Brown S.B Co., Houston	20 Mar. 1943	8 Sep. 1943	
MENGES	DE 320	Consolidated Steel Corpn.	15 June 1943	26 Oct. 1943	
MERRILL	DE 392	Brown S.B. Co., Houston	29 Aug. 1943	27 Nov. 1943	
MOORE	DE 240	Brown S.B. Co., Houston	21 Dec. 1942	1 July 1943	
MOSLEY	DE 321	Consolidated Steel Corpn.	26 June 1943	30 Oct. 1943	
NEUNZER	DE 150	Consolidated Steel Corpn.	27 Apr. 1943	27 Sep. 1943	
O'REILLY	DE 330	Consolidated Steel Corpn.	2 Sep. 1943	28 Dec. 1943	
PETERSON	DE 152	Consolidated Steel Corpn.	15 May 1943	29 Sep. 1943	
PETTIT	DE 253	Brown S.B. Co., Houston	28 Apr. 1943	23 Sep. 1943	
POOLE	DE 151	Consolidated Steel Corpn.	8 May 1943	29 Sep. 1943	
POPE	DE 134	Consolidated Steel Corpn.	12 Jan. 1943	25 June 1943	
PRIDE	DE 323	Consolidated Steel Corpn.	3 July 1943	13 Nov. 1943	
RICHEY	DE 385	Brown S.B Co., Houston	20 June 1943	30 Oct. 1943	
RICKETTS	DE 254	Brown S.B Co., Houston	10 May 1943	5 Oct. 1943	
ROBERT E. PEARY	DE 132	Consolidated Steel Corpn.	3 Jan, 1943	31 May 1943	
SLOAT	DE 245	Brown S.B. Co., Houston	21 Jan. 1943	16 Aug. 1943	
SNOWDEN	DE 246	Brown S.B. Co., Houston	19 Feb. 1943	23 Aug. 1943	
STANTON	DE 247	Brown S.B. Co., Houston	28 Feb. 1943	7 Aug. 1943	
STEWART	DE 238	Brown S.B. Co., Houston	22 Nov. 1942	31 May 1943	
STOCKDALE	DE 399	Brown S.B. Co., Houston	30 Oct. 1943	31 Dec. 1943	
SWASEY	DE 248	Brown S.B Co., Houston	18 Mar. 1943	31 Aug. 1943	
SWENNING	DE 394	Brown S.B. Co., Houston	13 Sep. 1943	1 Dec. 1943	
TOMICH	DE 242	Brown S.B. Co., Houston	28 Dec. 1942	26 July 1943	
WILLIS	DE 395	Brown S.B Co., Houston	14 Sep. 1943	10 Dec. 1943	



HUSE

1966, Skyfotos



SNOWDEN (broadside)

1964, courtesy Dr. Ian S. Pearsall

Escort Ships, Radar Picket (DER)

32 Converted "Edsall" Class

1,590 tons standard (1,850 tons full load)
306 (o.a.)×37×11 feet
2—3 inch, 50 cal, d.p.
Trainable Hedgehog, 6 homing torpedo tubes (2 triple), 1
D.C. rack
4 Fairbanks-Morse diesels. 2 shafts. B.H.P.: 6,000=21 kts.
300 tons
11,500 miles at 11 kts,
150 (accommodation for 187) Displacement: Dimensions: Guns: A/S weapons: Machinery: Oil fuel: Radius: Complement:

General

Originally rated as Destroyer Escorts (DE) but later grouped under the generic heading of Patrol Ships with the specific designation of Radar Picket Escort Ships. Anti-Submarine Warfare

Anti-Submarine Warrare

The armament installed for anti-submarine warfare included a hedgehog and two side launching racks for torpedoes later replaced in some, if not all, ships by six ASW torpedo tubes in triple mounts. Conversion

six ASW torpedo tubes in triple mounts.

Conversion
Fessenden, Harveston, Joyce, Kirkpatrick, Otterstetter and Strickland were converted to DER in 1951, Haverfield, Pillsbury, Savage and Wilholte in 1954-55, Calcaterra, Chambers, Falgout, Koiner Lowe, Rhodes, in 1955-56, Bristler, Camp, Durant, Finch, Forster, Hissem, Kretchmer, Lansing, Price, Roy O'Hale, Selfstorm, Vince in 1956-57, Blair, Mills, Newell, Ramsden, Sturtevant and Thomas J. Gary in 1956-58. New equipment included air search, height finder and surface search radar, and they were rigged to detect enemy action at sea or in the air in any form. Conversion included improvement in habitability by installing the mess compartment on the main deck (see photographs), and most of the new superstructure was of aluminium to reduce top weight. Harveson, underwent further conversion in 1957, Blair, DER 147, was converted from DE 147 under the 1957 program. Conversion work commenced on 2 Jan. 1958.

Many were decommissioned upon the disestablishment of radar barriers in 1965 when the seaward extension of early warning lines was discontinued.

Torpedo Tubes

The three 21 inch torpedo tubes originally carried were removed.

were removed.
Gunnery
Now have shields on the 3 inch gun mountings.
The six 20 mm. (3 twim) anti-aircraft guns formerly mounted were removed.
Photographs
A port bow view of Harveson, before conversion, and a starboard broadside view of Koiner, as converted to radar picket, appear in the 1957-58 (Diamond Jubilee) edition, and a starboard bow view of Pilisbury in the 1957-58 to 1963-64 editions, a starboard broadside view of Forster in the 1957-58 to 1964-65 editions, and a port broadside view of Wilholte in the 1958-59 to 1964-65 editions.
Pilisbury, DER 133, was stricken on 1 July 1965

Pilisbury, DER 133, was stricken on 1 July 1965 and Selistrom, DE 255, on 1 Nov. 1965.

P1 - 10	No.	Builders	Launched	Completed
BLAIR	DER 147	Consolidated Steel Corpn.	6 Apr. 1943	13 Sep. 1943
BRISTER	DER 327	Consolidated Steel Corpn.	24 Aug. 1943	30 Nov. 1943
CALCATERRA	DER 390	Brown S.B. Co., Houston	16 Aug. 1943	17 Nov. 1943
CAMP	DER 251	Brown S.B. Co., Houston	16 Apr. 1943	16 Sep. 1943
CHAMBERS	DER 391	Brown S.B. Co., Houston	17 Aug. 1943	22 Nov 1943
DURANT	DER 389	Brown S.B. Co., Houston	3 Aug. 1943	16 Nov. 1943
FALGOUT	DER 324	Consolidated Steel Corpn.	24 July 1943	15 Nov. 1943
FESSENDEN	DER 142	Consolidated Steel Corpn.	9 Mar. 1943	25 Aug. 1943
FINCH	DER 328	Consolidated Steel Corpn.	28 Aug. 1943	13 Dec 1943
FORSTER	DER 334	Consolidated Steel Corpn.	13 Nov. 1943	25 Jan. 1944
HARVESON	DER 316	Consolidated Steel Corpn.	22 May 1943	12 Oct. 1943
HAVERFIELD	DER 393	Brown S.B. Co., Houston	30 Aug. 1943	29 Nov. 1943
HISSEM	DER 400	Brown S.B. Co., Houston	26 Dec. 1943	13 Jan. 1944
JOYCE	DER 317	Consolidated Steel Corpn.	26 May 1943	30 Sep. 1943
KIRKPATRICK	DER 318	Consolidated Steel Corpn.	5 June 1943	23 Oct. 1943
KOINER	DER 331	Consolidated Steel Corpn.	5 Sep. 1943	27 Dec. 1943
KRETCHMER	DER 329	Consolidated Steel Corpn.	31 Aug. 1943	13 Dec. 1943
LANSING	DER 388	Brown S.B. Co., Houston	3 Aug. 1943	10 Nov. 1943
LOWE	DER 325	Consolidated Steel Corpn.	28 July 1943	22 Nov. 1943
MILLS	DER 383	Brown S.B. Co., Houston	26 May 1943	12 Oct 1943
NEWELL	DER 322	Consolidated Steel Corpn.	29 June 1943	30 Oct. 1943
OTTERSTETTER	DER 244	Brown S.B. Co., Houston	19 Jan 1943	6 Aug. 1943
PRICE	DER 332	Consolidated Steel Corpn.	30 Oct. 1943	12 Jan. 1944
RAMSDEN	DER 382	Brown S.B. Co., Houston	24 May 1943	19 Oct. 1943
RHODES	DER 384	Brown S.B. Co., Houston	29 June 1943	25 Oct. 1943
ROY O'HALE	DER 336	Consolidated Steel Corpn.	20 Nov. 1943	3 Feb. 1944
SAVAGE	DER 386	Brown S.B. Co., Houston	15 July 1943	29 Oct 1943
STRICKLAND	DER 333	Consolidated Steel Corpn.	2 Nov. 1943	10 Jan. 1944
STURTEVANT	DER 239	Brown S.B. Co., Houston	3 Dec. 1942	16 June 1943
THOMAS J. GARY	DER 326	Consolidated Steel Corpn.	21 Aug. 1943	27 Nov. 1943
VANCE	DER 387	Brown S.B. Co., Houston	16 July 1943	1 Nov. 1943
WILHOITE	DER 397	Brown S.B. Co., Houston	5 Oct. 1943	16 Dec. 1943



MILLS

April 1965, Wright & Logan



BLAIR

Added 1965, United States Navy, Official

Rated as Escort Ships (DE)

20 "Bostwick" Class

Displacement:	1,240 tons standard (1,900 tons full load)
Dimensions: Guns:	306 (o.a.)×37×14 feet 3—3 inch, 50 cal. d.p., 2—40 mm. AA
Tubes;	3—21 inch, in triple mount (some had tubes removed)
A/S weapons:	Fixed hedgehog just abaft No. 1. 3 inch gun, D.C.T.
Machinery:	G.M. diesels, electric drive, 2 shafts. B.H.P.: 6.000=19 kts.
Oil fuel:	300 tons
Radius:	1,500 miles at 11 kts.
Complement:	150 (accommodation for 220)

Originally rated as Destroyer Escorts (DE), 18 formerly on the disposal list were restored to the Reserve Fleet in 1952. Photographs

A photograph of Earl K. Olsen appears in the 1953-54 to 1964-65 editions. Transfer

Transfer
Eight ships of this class were transferred to Brazil, four to China and 14 to France. Ebert (768). Eldridge (173), Garfield Thomas (193), and Slater (766), were transferred to Greece in 1951. Burrows (105), Elsner (192), Gustafson (182), O'Neill (188), Rinehart (196) and Stern (187) to the Netherlands in 1950-51, Gandy (764). Thornhill (195), and Wesson (184) to Italy in 1951. Bangust (739), Waterman (740), and Weaver (741) to Peru in 1952, and Baron (166) and Bronstein (189) to Uruguay in 1951. Amick, DE 168, and Atherton, DE 169, were loaned to Japan in 1955. Muir (770) and Sutton (771) were transferred to the South Korean Republic in 1956. Hemminger, DE 746, to Thailand in July 1959. Disbosals
Carroll, DE 171, and Micka, DE 176, were stricken

Carroll, DE 171, and Micka, DE 176, were stricken on I Aug. 1965.

	No.	Builders	Launched	Completed
ACREE	DE 167	Federal S.B. & D.D. Co., Pt. Newark	9 May 1943	19 July 1943
воотн	DE 170	Federal S.B. & D.D. Co., Pt. Newark	21 June 1943	19 Sep. 1943
COFFMAN	DE 191	Federal S.B. & D.D. Co., Pt. Newark	28 Nov 1943	27 Dec. 1943
COONER	DE 172	Federal S.B. & D.D. Co., Pt. Newark	25 July 1943	21 Aug. 1943
EARL K. OLSEN	DE 765	Tampa S.B. Co.	13 Feb. 1944	10 Apr. 1944
HILBERT	DE 742	Western Pipe & Steel Co.	18 July 1943	4 Feb. 1944
KYNE	DE 744	Western Pipe & Steel Co.	15 Aug. 1943	4 Apr 1944
LAMONS	DE 743	Western Pipe & Steel Co.	1 Aug. 1943	29 Feb. 1944
LEVY	DE 162	Federal S.B. & D.D. Co., Pt. Newark	28 Mar. 1943	13 May 1943
McCLELLAND	DE 750	Western Pipe & Steel Co.	28 Nov. 1944	19 Sep. 1944
McCONNELL	DE 163	Federal S.B. & D.D. Co., Pt. Newark	28 Mar. 1943	28 May 1943
NEAL A. SCOTT	DE 769	Tampa S.B. Co.	4 June 1944	31 July 1944
OSTERHOUS	DE 164	Federal S.B. & D.D. Co., Pt. Newark	18 Apr. 1943	12 June 1943
OSWALD	DE 767	Tampa S.B. Co.	25 Apr. 1944	12 June 1944
PARKS	DE 165	Federal S.B. & D.D. Co., Pt. Newark	18 Apr 1943	22 June 1944
ROBERTS	DE 749	Western Pipe & Steel Co.	14 Nov. 1943	2 Sep. 1943
SNYDER	DE 745	Western Pipe & Steel Co.	29 Aug. 1943	5 May 1944
STRAUB	DE 181	Federal S.B. & D.D. Co., Pt. Newark	18 Sep. 1943	25 Oct 1943
TILLS	DE 748	Western Pipe & Steel Co.	3 Oct. 1943	8 Aug. 1944
TRUMPETER	DE 180	Federal S.B. & D.D Co., Pt. Newark	18 Sep. 1943	25 Oct. 1943
			•	



ROBERTS

Added 1965, United States Navy, Official

MODIFIED DESTROYER ESCORTS

Rated as

High Speed Transports (APD)

35 Converted Destroyer Escorts

		,	
No.	Ex-No.		Launched
APD	DE		
132	716	BALDUCK	27 Oct. 1944
57	161	BARBER	20 May 1943
73	672	BASSETT	15 Jan. 1944
127	711	BEGOR	25 May 1944
119	722	BEVERLY W. REID	4 Mar. 1944
48	69	BLESSMAN	19 June 1943
133	717	BURDO	25 Nov. 1944
65	215	BURKE	3 April 1943
130	714	COOK	26 Aug. 1944
38	54	DANIEL T. GRIFFIN	25 Feb. 1943
123	690	DIACHENKO	15 Aug. 1944
66	216	ENRIGHT	29 May 1943
43	62	GEORGE W. INGRAM	8 May 1943
80	212	HAYTER	11 Nov. 1943
86	794	HOLLIS	11 Sep. 1943
124	691	HORACE A. BASS	12 Sep. 1944
72	671	JACK C. ROBINSON	8 Jan. 1944
74	673	JOHN P. GRAY	18 Mar. 1944
49	70	JOSEPH E. CAMPBELL	26 June 1943
61	207	KEPHART	6 Sep. 1943
90	229	KIRWIN	16 June 1944
101	591	KNUDSON	5 Feb. 1944
55	159	LANING	4 July 1943
60	206	LIDDLE	9 Aug. 1943
71	670	ODUM	19 Jan. 1944
70	669	PAYLIC	18 Dec. 1943
102	592	REDNOUR	12 Feb. 1944
92	233	REGISTER	20 Jan. 1944
100	590	RINGNESS	5 Feb. 1944
89	228	RUCHAMKIN	15 June 1944
76	676	SCHMITT	29 May 1943
122	689	SCRIBNER	I Aug. 1944
111	601	WALSH	28 Apr. 1945
135	719	WEISS	17 Feb. 1945
95	236	WILLIAM M. HOBBY	II Feb. 1944

1,400 tons standard, (2,130 tons full Displacement:

load)
300 (w.l.), 306 (o.a.)×37×123 feet
1—5 inch, 38 cal d.p., 4 to 8—40
mm. AA.
6 short torpedo tubes (2 triple)

A/S weapons: amidships in some ships.

G.E. geared turbines with electric drive. 2 shafts. S.H.P.: 12,000 -Machinery:

drive, 2 23.6 kts. Boilers: Oil fuel: 2 Express

350 tons 5,500 miles at 15 kts. 204 plus 162 troops Radius: Complement:

General

General
Former destroyer escorts converted, and officially rated as High Speed Transports. They can carry four LCVP (Landing Craft Vehicle-Personnel), War loss: Bates (APD 47, ex-DE 68). Three. Chase APD 54 (DE 158), England APD 41 (DE 635) and Witter (APD 58). (DE 636) were scrapped after the Second World War. Kirwin, APD 90, recommissioned on 15 Jan, 1965, replacing Earle B. Hall, APD 107, decommissioned and stricken. Modernisation

Modernisation
Ruchamkin, Weiss (see photographs above) and others
have undergone FRAM conversion.
Flagship Conversion
Laning (55), Lloyd (63), Hollis (86), Knudson
(101), Cavallero (128), Cook (130) and Balduck
(132) underwent limited conversion into APD flagships
with staff quarters and additional facilities for officers.

APD 98 (av. Truytun, DF 282) had her name with.

APD 98 (ex-Truxtun, DE 282) had her name withdrawn, since no two naval ships can have the same name, the name Truxtun having been assigned to DLGN 35 in 1963. **Photographs**

A photograph of Lloyd appears in the 1953-54 to 1964-65 editions, of Cook in the 1957-58 and 1958-59 editions, and of Knudson in the 1959-60 to 1964-65 editions

Transfers

Transfers

Cavallero, APD 128, was transferred to Korea in Oct. 1959, at Long Beach, California, and renamed Kyung Nam Kleinsmith, APD 134, was transferred to Taiwan China in May 1960, and renamed Tien Shan. Bowers, APD 40, transferred to the Philippines on 21 Apr. 1961, capsized in a storm at Cavite, but was raised and scrapped (sold to Mitsubishi Int. Corp. on 31 Jan. 1966.) Brock, Myers and Upham were sold to Columbia, and Crosley, Frament, Hunter Marshall, Reeves and Walter S. Gorka were sold to Ecuador in 1961-62 and converted into power plants. Belet, APD, 109, Don O. Woods, APD 118, Earheart, APD 113, and Joseph M. Amman, APD 117, were sold to Mexico in May and June 1964. Tollberg, APD 103, was transferred to Columbia in 1965, and Kinzer, APD 91, and Donald W. Wolf, APD 129, to Taiwan China, Horry L. Corl, APD 108 and Julius A. Raven, APD 110, were stricken on 15 Jan. 1966 and transferred to Korea. Gantner, APD 42, Kline, APD 120, ex-Truxtun, APD 98, and Walter B. Cobb, APD 106, were stricken on 15 Jan. 1966 and subsequently transferred to Taiwan China, but Walter B. Cobb was lost at sea while under tow to Taiwan and Bull, APD 78, was sold to



RUCHAMKIN

1965. United States Navv. Official



WEISS

1965, United States Navy, Official



LANING (APD Flagship)

1964, courtesy "Our Navy"

Taiwan as a replacement for her. Two additional APDs are to be transferred to Taiwan China. Hubbard, APD 53. was stricken on 1 May 1966 for transfer under MDAP.

under MDAP. Disbosals
Wantuck, APD 125, was stricken from the Navy List on 4 Mar. 1958 after collision with an attack transport (APA). Carpellotti, APD 136, was stricken on 1 Dec. 1960. Amesbury, APD 46, Barr, APD 39, Bray, APD 39, Brock APD 93, Cread, APD 88, Crosley, APD 87, Frament. APD 77, Haines, APD 84, Hunter Marshall, APD 112, Ira Jeffrey, APD 44, John Q. Roberts, APD 94, Myers, APD 105, Ray K. Edwards, APD 96, Reeves, APD 52, Rogers Blood, APD 105,

Punels, APD 85, Sims, APD 50, Tatum, APD 81, Upham, APD 99, Walter S. Gorka, APD 114, Webber, APD 75, and William J. Pattison, APD 104, were stricken at the end of 1960, and Walter X. Young, APD 131, in 1962. Bray APD 139, was expended as a target on 26 Mar. 1963. Arthur L. Bristol, APD 97, Bunch, APD 79, Francovich, APD 116, Gosselin, APD 126, and Yokes, APD 69, were stricken on 1 Apr. 1964. Charles Lawrence, APD 37, Earle B. Hall, APD 107, Hopping, APD 51, Lee Fox, APD 45, Loy, APD 56, and Newman, APD 59, were stricken in 1965, Cofer, APD 62, was stricken on 1 Apr. 1966. and Lloyd, APD 63, on 1 June 1966. Rayn.ond W. Herndon, APD 121, is to be disposed of.

Officially Rated as

Amphibious Transports Dock (LPD)

12 "Ogden" Class

10,000 tons light (17,150 tons Displacement:

Dimensions:

10,000 tons light (17,150 tons full load)
Length: 562 (pp.), 570 (w.l.), 581 (o.a.) feet
Beam: 84 feet
8—3 inch, 50 cal. (4 twin)
Steam turbines. 2 shafts.
5.H.P.: 24,000=20 kts. Guns: Machinery:

Complement:

General
A new class larger than the "Raleigh" class, with the ability to carry both landing craft and transport helicopters together with 840 combat troops and their equipment, and 3,900 tons of cargo; and designed to operate helicopters which will land heavier combat equipment needed by troops landed from the ship and provide landing craft for over-the-beach assault.

Construction

Construction
LPDs 7, 8, 9 and 10 were authorised in the Fiscal
Year 1963 Programme. LPDs 7 and 8 were the first to
be awarded to a private firm, a fixed price contract of
\$51,458,000 for the two ships, announced on 25 Jan.
1963. The awarded of a fixed price contract for LPDs
9 and 10 of \$50,445,000 was announced on 22 May.
1963. The construction of three more LPDs (11, 12,
13) was authorised in the 1964 Programme, to cost
\$69,774,000 and to be fitted as flagships. Two more
(14, 15) were in the 1965 Programme, and one in the
1966 Programme.
Lockheed Shipbuilding and Construction Co., Seattle,
was formerly Puget Sound Bridge & Dry Dock Co.

ASSAULT SHIPS

	No.	Builders	Laid down	Launched	Commissioned
OGDEN	LPD 5	New York Naval Shipyard, Brooklyn	4 Feb. 1963	27 June 1964	19 June 1965
DULUTH	LPD 6	New York Naval Shipyard, Brooklyn	18 Dec. 1963	14 Aug. 1965	18 Dec. 1963
CLEVELAND	LPD 7	Ingalls Shipbuilding Co. Pascagoula	30 Nov. 1964	7 May 1966	-
DUBUQUE	LPD 8	Ingalls Shipbuilding Co. Pascagoula	25 Jun 1965	6 Aug. 1966	****
DENVER	LPD 9	Lockheed S.B. & Construction Co.	7 Feb. 1964	23 Jan. 1965	
JUNEAU	LPD 10	Lockheed S.B. & Construction Co.	23 Jan. 1965	12 Feb. 1966	
CORONADO	LPD 11	Lockheed S.B. & Construction Co.	3 May 1965	30 July 1966	
SHREVEPORT	LPD 12	Lockheed S.B. & Construction Co.	27 Dec. 1965	-	_
NASHVILLE	LPD 13	Lockheed S.B. & Construction Co.	14 Mar. 1966		
TRENTON	LPD 14	Lockheed S.B. & Construction Co.	8 Aug. 1966	_	_
_	LPD 15	Lockheed S.B. & Construction Co.	31 Oct. 1966	_	
_	LPD 16				



LA SALLE (extra level for flag quarters and command spaces)

1965, United States Navy, Official

4 "Raleigh" Class

Displacement:

Dismensions:

8,040 tons light (13,900 tons full load)
Length: 510 feet (w.l.), 522 (o.a.), 535 feet with gates open. Beam: 84 feet
8—3 inch, 50 cal. (4 twin)
6 UH-34 transport helicopters
1 LCU and 3 LCM (6)s or 6 LCM (6)s Guns: Aircraft: Landing craft:

(6)s Steam turbines. 2 shafts. S.H.P.: 24,000=23 kts. 2 Babcock & Wilcox 490 (30 officers, 460 men) Machinery:

Boilers: Complement:

General
Raleigh was the prototype of a new "all purpose" amphibious class, described as excellent ships, which employ the "balanced load" concept. Previous amphibious task forces carried troops in one type of ship, cargo in another, assault craft and tanks in others. These ships carry all these components. In addition they operate troop and cargo-carrying helicopters to project assault forces inland in support of the landing beaches. They have a new type of hull combining features of both an attack transport and an attack cargo ship with the basic hull of the LSDs, but with a shortened and covered well. They carry landing craft in the covered well, the roof of which is a helicopter landing platform, and launch their landing craft from either floating or roll on/roll off when in stopped position, or when moving by floating out of the well. Each can accommodate 930 to 1,000 marines and their equipment, and carry 2,000 tons of cargo. Unlike LPHs and LSDs, these ships cannot strike helicopters below. La Salle and later ships have an additional level for flag quarters and command spaces.

Construction
Raleigh was authorised in the Fiscal Year 1959 New Construction Programme, and Vancouver in the 1960 Programme. Cost \$29,000,000. La Salle was authorised in the 1961 Programme, Austin, Duluth and Ogden in the 1962 Programme. Cost \$41,400,000.



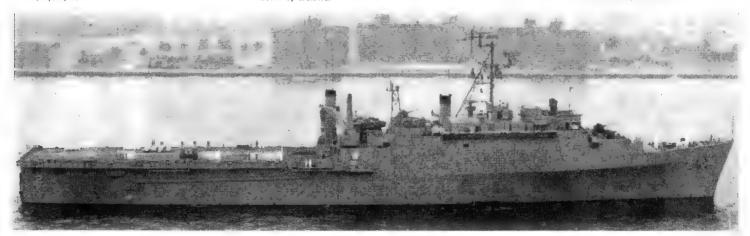


RALEIGH (showing bridge layout)

Nomenclature
Amphibious transport docks are named after United
States cities the namesakes of which were explorers and
developers of America. Some of the names were previously
borne by cruisers.

1964, United States Navy, Official

Photographs
A starboard bow oblique aerial view of Raleigh appears in the 1963-64 edition, and a port quarter oblique aerial view of Vancouver in the 1963-64 and 1964-65 editions.



VANCOUVER (broadside view)

1963, (United States Navy, Official (direct from U.S.S. Vancouver, courtesy of Commanding Officer)

GUIDED MISSILE SHIP (AVM) and SEAPLANE TENDERS (AV)

4 "Currituck" Class

(ex-AV ||) NORTON SOUND 28 Nov. 1943 CURRITUCK 11 Sep. 1943 PINE ISLAND 26 Feb. 1944 SALISBURY SOUND 13 June 1944 (ex-Puget Sound)

9,106 tons standard (15,092 tons full load) 520 (w.f.), $540\frac{1}{2}$ (o.a.)×69 $\frac{1}{4}$ × Displacement: Dimensions:

26 feet 4—5 inch, 38 cal. (none in Norton Sound)
Geared turbines (Parsons in Currituck), Allis-Chalmers in others. 2 shafts S.H.P.: 12,000 =19.2 kts.
4 Babcock & Wilcox
Norton Sound: 531 (38 officers and 493 men) Machinery:

Boilers: Complemens;

General

Complemenc: Norton Sound: 531 (38 officers and 493 men)

Currituck was built by Philadelphia Navy Yard, others by Todd Shipyards. Los Angeles. Currituck was modernised under the 1957 conversion program at Philadelphia Naval Shipyard and on completion of the refit was commissioned on 20 Aug. 1960. Norton Sound was adapted as the Navy's seagoing rocket laboratory ship and equipped for experiments with guided missiles. Two forward 5-inch guns were removed to make space for helicopter platform; and her stern crane was removed. In 1960 Norton Sound was assigned to the Operational Test and Evaluation Force. She was fitted with a launcher for "Tartar" guided missile testing. In 1963 her "Typhon" conversion began at Maryland Shipbuilding and Drydock Company, Baltimore, Maryland, and she recommissioned on 20 June 1964.

Norton Sound has served as a sea-going test platform for various other missile system since 1949. Guided Missile Conversion

The 1963 conversion provided for the installation in Norton Sound of the prototype "Typhon" air defence system for test and evaluation purposes. This shipboard installation was considered at the time to be a necessary step in the development of the ultimate "Typhon" weapons system which was scheduled for installation in the nuclear powered guided missile frigate of the Fiscal Year 1963 new construction programme. But the "Typhon" weapons system was cancelled as being too bulky, costly, and inffective. However, the "Typhon" radar system was installed and is now undergoing evaluation. Prototype designed to meet aircraft and missile threats of the 1970s. Single high power radar will automatically and simultaneously search, track, acquire target, and guide missiles. High speed digital computers.

search, track, acquire target, and guide missiles. High speed digital computers, Photographs
A port bow aerial view of Pine Island appears in the 1954-55 to 1959-60 editions, Disposals of "Kenneth Whiting" Class
Of the "Kenneth Whiting" class Cumberland Sound, AV 17, and Kenneth Whiting, AV 14, were stricken from the List of Naval Vessels in July 1961, and Hamlin, AV 15, and St. George, AV 16, in July 1963.



NORTON SOUND (after conversion)

1965, United States Navy, Official



SALISBURY SOUND

Added 1960, United States Navy, Official

Aircraft Repair Ship (Helicopter) I "Curtiss" Class

CORPUS CHRISTI BAY, T-ARVHI (ex-Albemarie, AV 5)

tons standard (13,475 Displacement: 8.671 tons full load) (w.l.), $527\frac{1}{2}$ (o.a.)×69 $\frac{1}{4}$ × Dimensions: 211 feet.

Aircraft: 25 Parsons geared shafts S.H.P.; Machinery: turbines. 2 12,000=19.7

kts. 4 Babcock & Wilcox Express 430 (130 civil service crew, 300 army personnel) Boilers: Complement:

General
Built as a large seaplane tender by the New York
Shipbuilding Corporation, New Jersey, under the 1957
Fiscal Year Programme, with space for Flag and Fleet
Air Wing staffs. Launched on 13 July 1940.
Underwent modernisation and conversion under the
1956 Fiscal Year programme to handle larger seaplanes
at Philadelphia Navy Shipyard, and was provided with
stern ramps, servicing booms, semi-sheltered area, and
a service drydock for seaplanes, being commissioned
on 21 Oct. 1957. Decommissioned in 1960, and placed
in the custody of the Maritime Administration National
Defence Reserve Fleet. Stricken from the Navy List in
Sep. 1962. But in Aug. 1964 she was reacquired by the
Navy from the Maritime Administration Reserve Fleet
for conversion to aeronautical maintenance facility at



ALBEMARLE (before conversion to aeronautical maintenance in Dec. 1965) Added 1965, United States Navy, Official

Charleston Naval Shipyard and completion in Dec. 1965 with U.S. Army Helicopter Maintenance Company for employment in S.E. Asia. Renamed U.S.N.S. Corpus Christl Boy and redesignated T-ARVH-1 on 27 Mar. 1965. She was reactivated and assigned to MSTS with civil service crew: Equipped to repair light Army aircraft and helicopters at sea or in port, but primarily for such repairs in the Viet Nam area, U.S. Army personnel man the maintenance and machine shops. Fitted with helicopter platform forward, aircraft hangar, and 22-ton cranes to hoist planes on board, Provides depot maintenance in Vietnam forward areas for more than 1,500 Army aircraft. Operated by the Military Sea

Transportation Service. Reclassified as Aircraft Repair Ship (Helicopter) in 1966.

Ship (Helicopter) in 1700.

Photographs
See photographs: a large starboard broadside view in the 1958-59 to 1961-62 editions, and a starboard quarter oblique aerial view in the 1959-60 to 1961-62

quarter oblique aerial view in the 1737-00 to 1701-02 editions.

Disposals

Sistership Curtiss (see photograph in the 1957-58 to 1964-65 editions), modified for use by the Atomic Energy Commission was decommissioned to the Reserve Fleet in 1957 and stricken from the Navy List in 1963 and transferred to the Maritime Administration.

I "Chandeleur" Type

AV 10 CHANDELEUR

Displacement:

9,031 tons standard (14,200 tons full load)
492 (o.a.)×69½×23½ feet
1—5 inch, 38 cal., 4—3 inch, 50 cal.
G.E. geared turbines, I shaft.
S.H.P.: 8,500=18.4 kts.
2 Foster-Wheeler Dimensions: Machinery:

General
Launched on 29 Nov. 1941. Maritime Commission type
C3-51-B1. Out of commission, in reserve.

Disposals of "Tangier" Class
Both of the seaplane tenders of the "Tangier" Class.
Pocomoke, AV 9, and Tangier, AV 8, were stricken from the
List of Naval Vessels in June 1961.



CHANDELEUR

Added 1965, United States Navy, Official

FLEET MINELAYERS (MMF)

TERROR

No. MMF 5 (ex-MM 5, ex-CM 5)

I Large Type Formerly rated as

Cruiser Minelayer (CM)

Displacement:

Dimensions: Guns:

Mines: Machinery:

5,875 tons standard (8,650 tons full load) 454 (o.a.) \times 60 \pm \times 20 feet 4—5 inch. 38 cal. (single); 24—40 mm. AA. (6 quadruple mountings) 800 capacity Geared turbines. 2 shafts, S.H.P.: 11,000=20 kts. 4

Boilers:

4 8,000 miles at 15 kts. 400 (accommodation for 114 officers, 450 men) Radius: Complement:

Authorised under the 1938 Fiscal Year New Con-struction Programme. Mine ports in stern. Cruiser type with high freeboard. In Atlantic Reserve Fleet. Texas Group Tender and Headquarters Ship. Reclassification

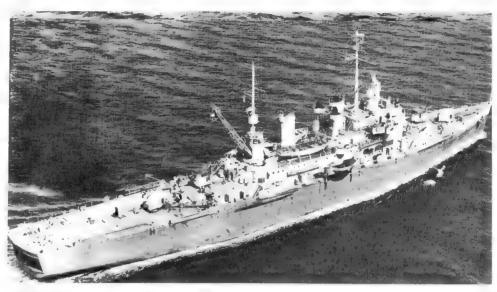
Reclassification
Formerly classified as a Large (Cruiser) Minelayer
(CM) but reclassified as a Fleet Minelayer (MM) in
Feb. 1955 and redesignated MMF in 1956.

Builders Philadelphia Navy Shipyard

Laid down 1940

Launched 6 June 19

Completed 1942



TERROR

United States Navy, Official

MINE COUNTERMEASURES SUPPORT SHIPS (MCS)

OZARK

No. MCS 1 (ex-LSV 1, ex-CM 6, ex-AP 106) MSC 2 (ex-LSV 2, ex-CM 7, ex-AP 107)

Launched 19 May 1942 15 June 1942

Completed 30 June 1944 23 Sep. 1944

Conversion Boland Machine & Manufacturing Co., New Orleans, Louisiana Norfolk Shipbuilding & Dry Dock Corpn, Norfolk, Virginia

2 Converted Large Minelayer Type

Displacement:

5,875 tons standard (9,040 tons

Dimensions: Guns:

Boilers:

5,875 cons standard (9,040 tons full load) 440 (w.l.), 455½ (o.a.) × 60½ × 20 feet 2—5 inch, 38 cal. d.p.; 8—40 mm. AA.
G.E. geared turbines. 2 shafts.
S.H.P.: 11,000=20·3 kts.
4 Combustion Engineering "D" type
Accommodation for 564 (114 officers, 450 men)

Machinery:

Complement:

officers, 450 men)

General

Both built by Willamette Iron & Steel Corpn., Portland, Oregon, under the 1940 Programme and laid down on 12 July, 1941. Designed as Large Minelayers, but subsequently converted into Landing Ships (Vehicle), LSV. Reclassified as Mine Warfare Command and Support ships and redesignated MCS in 1955. Again reclassified as Mine Countermeasures and Support Ships in 1958, and as Mine Countermeasures Support Ships on 25 Aug. 1960. Stricken from the Navy List on 1 Sep. 1961, but reinstated on 1 Oct. 1963 (Ozark) and 1 June 1964 (Catskill) and converted into the new conception of Mine Countermeasures Support Ships under the Fiscal Year 1963 (Ozark) and 1964 (Catskill) Shipbuilding and Conversion Programmes, for commissioning in Dec. 1965 and Apr. 1966, respectively.

Conversion

It is officially stated that each conversion of the former Vehicle Landing Ship (LSV) type will be capable of transporting, maintaining, operating and supporting twenty 36-foot minesweeping launches (MSL) and two helicopter minesweepers. These capabilities will provide a high degree of mobility to minesweeping operations. They will be used mainly in forward areas in support of amphibious landing operations. They will be capable of controlling and providing limited support for minesweeping ships and boats, and helicopters.

Disposals

Of the three vessels of the original netlayer type con-

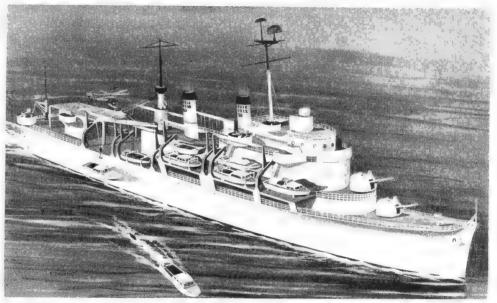
for minesweeping supparations of the original netlayer type consists of the three vessels of the original netlayer type converted into vehicle landing ships, Saugus, MCS 4 (ex-LSV 4, ex-AN 4) was stricken from the Navy List on I July 1961, and Monitor, MCS 5 (ex-LSV 5, ex-AN 5) and Osage, MCS 3 (ex-LSV 3, ex-AN 3), were stricken on I Sep. 1961. The netlayer Galilea (ex-Montauk), AKN 6 (ex-LSV 6, ex-AN 2, ex-AP 161) was stricken from the Navy List on I Sep. 1960.

I LSD Type

MCS 7 EPPING FOREST

Reclassification
The dock landing ship Epping Forest, ex-LSD 4, employed as a mine escort tender in the Far East, see particulars on a later page, was reclassified as MCS 7 on 30 Nov. 1962.

Tank Landing Ship Type
The mine countermeasures support ship Orleans Parish, former tank landing ship LST 1069, see particulars on a later page, was reclassified as MCS 6 on 19 Jan. 1959, but was redesignated as T-LST 1069 on 1 June 1966.



OZARK (conversion design)

1962, United States Navy, Official



OZARK (original design)

United States Navy, Official

SUBMARINE TENDERS (AS)

2 New Construction AS (FBM)

AS 33 SIMON LAKE

Displacement: Dimensions: Guns: Machinery: Boilers: Complement:

AS 34 CANOPUS
21,450 to 22,250 tons full load
6434 × 85 × 30 feet
4—3 inch, 50 cal. in 2 twin mountings amidships
Steam turbines
2 Combustion Engineering. 630 lb./sq. in., 850 deg.F
1,075 (55 officers, 1,020 men). Accommodation for 1,387
officers and men

AS 34 CANOPUS

Complement: 1,075 (55 officers, 1,020 men). Accommodation for 1,387 officers and men

Simon Lake was authorised in the Fiscal Year 1963 Programme. This ship is of new and improved design over those provided in the 1960 and 1962 Programmes. Her primary purpose is to provide full mobile base facilities and support for nuclear powered submarines including FBM submarines. This includes a full nuclear reactor support capability and facilities for handing, replacement and limited servicing of the Polaris missiles. She is designed to support fully nine SSBNs with as many as three simultaneously receiving complete alongside services. A large gantry crane with athwartships bridge travel and extremely accurate controls will be provided in order to on and off load missiles and nuclear containers from the submarines, Built by Puget Sound Naval Shipyard, Bremerton, Wash. for \$73,000,000, Construction began in Oct, 1962. The keel was laid down on 7 Jan. 1963 and she was launched on 8 Feb. 1964 and commissioned on 7 Nov. 1964.

Her sister ship, Canopus was authorised under the Fiscal Year 1964 New Construction Programme. Built by Ingalls Shipbuilding Corp. at a cost of \$34,812,350. Her keel was laid on 2 Mar. 1964 and she was launched on 12 Feb. 1965 and commissioned on 4 Nov. 1965, The third and final FBM tender, AS 35, was authorised in the Fiscal Year 1965 New Construction Programme, but was deferred.

Named after Simon Lake.

Submarine tenders are named after pioneers in submarine development. AS 33 was named after Simon Lake whose Lake Torpedo Boat Company produced its first submarine for the United States Navy in 1912. Simon Lake served as adviser to the Navy during the Second World War until his death on 23 June 1945. Photographs

A starboard bow surface view of Simon Lake appears in the 1965-66 edition.



SIMON LAKE

1966

AS 37

2 New Construction AS

AS 36

Displacement: Dimensions: Guns:

22,640 tons full load 643×85 feet 2—5 inch (single); 4—50 cal. M.G.

General

General AS 36 in the Fiscal Year 1965 Programme. AS 37 in the 1966 Programme (cost \$36,427,000). Designed primarily to support nuclear powered attack submarines. Will have logistic capability for 12 SSN, simultaneous complete alongside services for four SSN, and facilities for the repair of nuclear power plants. To be built by General Dynamics, Quincy.

2 "Hunley" Class

AS 31 HUNLEY
Displacement:
Dimensions:

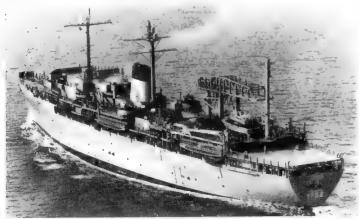
AS 32 HOLLAND
10,500 tons standard (18,300 tons full load)
599×83 feet
4—3 inch, 50 cal., in 2 twin mountings
10 Fairbanks-Morse diesel electric, 12,000 kw, I shaft.
B.H.P.: 15,000=19 kts.
1,081 (58 officers, 1,023 men) plus accommodation for 30 officers and 270 men from submarines

Complement:

General
Tenders for serving Polaris submarines. Hunley was authorised in the Fiscal Year 1960
New Construction Programme and built by Newport News Shipbuilding & Drydock Co., Newport, Virginia, at a cost of \$28,680,000. She provides weapon and nuclear logistic support for ballistic missile submarines. A large hammerhead crane of 32 tons capacity with athwartships bridge travel, the first of its kind aboard a ship, is installed to on and off load missiles from submarines. Laid down on 28 Nov. 1960. Launched on 28 Sep. 1961.
Commissioned on 16 June 1962. Completed on 4 Aug. 1962.
Holland was authorised under the 1962 Programme. Built by Ingalls Shipbuilding Corp. for \$24,359,800. Laid down on 5 Mar. 1962. Launched on 19 Jan. 1963. Commissioned on 7 Sep. 1963. Equipped with 52 workshops and a helo platform.
Nomenclature
Holland is named after John Philip Holland a British equipped to the content of the content

Numericature
Holland is named after John Philip Holland, a British emigrant to the United States, who became "the father of the submarine". One of his submarines was accepted by the Nayy in 1900 and became Submarine Torpedo Boat No. 1, named Holland, the first successful Navy submarine.

Photographs
A photograph of Hunley appears in the 1962-63 and 1963-64 editions.



HOLLAND

1964, United States Navy, Official

Submarine Tenders-contd.

7 "Fulton" Class

5 Mare Island Navy Yard 15 BUSHNELL (14 Sep. 1942) 11 FULTON (27 Dec. 1940) 16 HOWARD W. GILMORE (ex-Neptune, 16 Sep. 1943)

17 NEREUS (12 Feb. 1945)
12 SPERRY (17 Dec. 1941)
2 Moore Dry Dock Co., Oakland, Calif.
18 ORION (14 Oct. 1942)
19 PROTEUS (12 Nov. 1942)

Displacement: Dimensions:

9,734 tons standard (18,000 tons full load)
(Proteus 10,234 tons standard, 18,500 tons full load)
530\(\frac{1}{2}\), Proteus 574\(\frac{1}{2}\) (o.a.)\(\times\)73\(\frac{1}{2}\)\(\times\)25 inch, 38 cal. (After 2—5 inch guns and ten 40 mm. A.A. guns removed in Sep. 1960)
G.M. diesel electric. B.H.P.: 11,200=15.4 kts,
444 to 1,470 (total accommodation)

Machinery: Complement:

General Fulton was authorised under 1938 Programme, others under 1940. Launch dates above.

Fulton was authorised under 1938 Programme, others under 1970. Eauthorised Book. Ships vary in detail.

Conversion
Proteus, AS 19, was converted at the Charleston Naval Shipyard, under the Fiscal Year 1959 Conversion Programme, at a cost of \$23,000,000 to serve the Nuclear Powered Fleet Ballistic Missile Submarine Squadron. Conversion was started on 19 Jan. 1959 and she was recommissioned on 8 July 1960. She was lengthened by adding a section amidships 44 feet in length, and the bare hull weight of this 6-deck high insertion was approximately 500 tons.

500 tons.

Nereus, A5 17, underwent a 4-month conversion in Nov. 1959 to Feb. 1960, for facilities to service nuclear powered submarines. Her after guns were removed and her upper decks extended aft to provide additional workshops.

Bushnell, Fulton, Howard W. Gilmore, Nereus, Orion and Sperry have undergone FRAM II conversion to handle nuclear powered submarines.

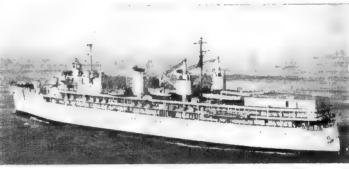
Photographs

otographs A photograph of Fulton appears in the 1958-59 and 1959-60 editions, of Orion the 1950-51 to 1957-58 editions, of Proteus in the 1961-62 to 1965-66 editions.



BUSHNELL

1964, United States Navy, Official



NERFLIS

1961, United States Navy, Official

I "Aegir" Class

AS 23 AEGIR

Displacement: Dimensions: Guns: Machinery:

8,100 tons standard (16,100 tons full load) 492 (oa.)×69½×26½ (max.) feet 1.—5 inch. 38 cal., 4—3 inch. 50 cal. Westinghouse geared turbines. S.H.P.: 8,500=18·4 kts.

General

Launched in 1943 and completed in 1944. Built by Ingalls Shipbuilding Corp. C3-S-A2 type. Accommodation ship for the San Diego Group, Pacific Reserve Fleet,

Of three sister ships, Anthedon, AS 24 and Clytle, AS 26 were stricken from the list of naval vessels on 1 Sep. 1961, and Apollo, AS 25, transferred to the Maritime Administration in 1963, was stricken in 1964.

2 "Griffin" Class

AS 13 GRIFFIN (ex-Marmacpenn, 10 Nov. 1939)

AS 14 PELIAS (ex-Mormacyork, 14 Nov. 1939)

Dimensions: Guns: Machinery:

C3 Cargo type, Launch dates above. Completed on 31 July 1941 and 5 Sep. 1941, respectively. Both in the Pacific Reserve Fleet.

Photographs A photograph of Pelias appears in the 1952-53 to 1960-61 editions.

I "Euryale" Class

AS 32 EURYALE (ex-S.S. Hawaiian Merchant)

Displacement: Dimensions:

8,282 tons standard (15,400 tons full load)
492\(\frac{1}{2}\) (0.a.)\(\times 69\(\frac{1}{2}\)\times 25 feet
1.—5 inch, 38 cal., 4.—3 inch, 50 cal.
De Laval geared turbine. S.H.P.: 8,500=16.5 kts.

General

Launched in 1941. Acquired by the U.S. Navy in 1943. Modified C3 type. In the Pacific Reserve Fleet

DESTROYER TENDERS (AD)

2 New Construction

AD 37 SAMUEL GOMPERS

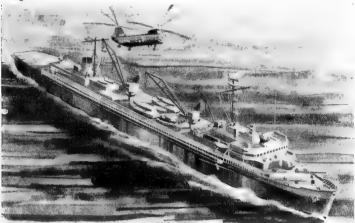
AD 38 PUGET SOUND

20,500 tons to 21,600 tons full load Dispiacement: Dimensions: Guns: 20,300 tolls (6 27,500 tolls pair 643×85 feet 1—5 inch, 38 cal. Speed=over 18 kts. 1,803 (135 officers, 1,668 men)

Machinery:

Complement:

General Samuel Gompers in the first Destroyer Tender of post-Second World War design. She will have repair, supply and support facilities for new destroyer types, missile systems, anti-submarine warfare weapons and equipments, advanced communications and electronic systems and nuclear propulsion plants. She will be able to furnish in port service to six guided missile destroyers alongside simultaneously. Cost \$37,000,000. The ship was authorised under the Fiscal Year 1964 new construction programme, laid down on 9 July 1964 and launched on 14 May 1966. Puget Sound was authorised in the 1965 programme. Both built by Puget Sound Naul Shipyard. Another AD was in the 1966 programme, but construction was not approved by Congress.



NEW AD

1963, United States Navy, Official

5 "Dixie" Class

e ' Class' 3 Tampa S.B. Co.
AD 17 PHEDMONT (7 Dec. 1942)
AD 18 SIERRA (23 Feb. 1943)
AD 19 YOSEMITE (16 May 1943) 2 New York S.B. Corpn. AD 14 DIXIE (27 May 1939) AD 15 PRAIRIE (9 Dec. 1939)

9,450 tons standard (17,176 tons full load)
520 (w.l.), 530½ (o.a.)×73½×25½ feet
2—5 inch 38 cal.
Geared turbines. 2 shafts. S.H.P.: 11,000=19·6 kts.
1,076 to 1,698 (total accommodation) Displacement: Dimensions: Guns: Machinery:

General Complement:

Conversion

All underwent FRAM II conversion with helicopter platform and hangar; heliport and repair facilities to service DASH drones and store homing torpedoes; and bays for guided missile servicing. The two after 5 inch guns and the eight 40 mm. AA. guns were removed.

Photographs

A photographs

A photograph of Dixie appears in the 1954-55 to 1957-58 editions, a starboard quarter view of Prairie in the 1958-59 to 1961-62 editions, and a port bow view of Prairie in the 1962-63 and 1963-64 editions.



PIEDMONT

1964, United States Navy, Official

16 CASCADE

Displacement: Dimensions: Guns: Machinery: Complement:

I "Cascade" Type

9.800 tons standard (16.600 tons tull load) 492 (o.a.) \times 69 $\frac{1}{2}\times$ 27 $\frac{1}{4}$ (max.) feet 2—5 inch, 38 cal., 6—40 mm. AA. Turbines. S.H.P.: 8,500=18-4 kts. 857 (total accommodation)

General
Built by Western Pipe & Steel Co., San Francisco, C3-S1-N2 type. Launched on 7 June 1942 and commissioned on 12 Mar. 1943.

Disposals
Of the "Hamul" class. Hamul (ex-Dr. Lykes), AD 20, was decommissioned and transferred to the Maritime Administration on 9 June 1962 and stricken from the Navy List in July 1963, and sister ship Markab, AD 21, was reclassified as AR 23 on 15 Apr. 1960 and recommissioned in 1960.



CASCADE

1963, Captain Aido Fraccaroli

Destroyer Tenders-contd.

9 "Arcadia" Class

AD
29 ISLE ROYALE (19 Sep. 1945)
26 SHENANDOAH (29 Mar. 1945)
31 TIDEWATER (30 June 1945)
27 YELLOWSTONE (12 / pr. 1945) AD 23 ARCADIA (19 Nov. 1944) 36 BRYCE CANYON (7 Mar. 1946) 24 EVERGLADES (28 Jan. 1945) 25 FRONTIER (25 Mar. 1945) 28 GRAND CANYON (27 Apr. 1945)

8,165 tons standard (16,635 to 16,900 tons full load)
465 (w.l.), 492 (o.a.)×69½×27½ feet
1—5 inch, 4—3 inch, 4—40 mm, AA,
Geared turbines, S.H.P.: 8,500=18·4 kts.
2 Foster-Wheeler or Babcock & Wilcox
778 to 918 (total accommodation) Displacement: Dimensions: Guns:

Machinery: Boilers: Complement:

Complement: 778 to 918 (total accommodation)

General
Constructed by Todd Shipyards (Arcadia, Grand Canyon, Shenandoah, Yellowstone), Charleston Navy Yard (Bryce Canyon, Tidewater), Los Angeles S.B. & D.D.
Co. (Everglades, Frontier) and Tacoma-Pacific Shipyard (Isle Royale). Three other ships (Arrowhead, Canopus, New England) were cancelled in 1945, and a fourth (Great Lakes) sold, Frontier was first commissioned on 2 Mar. 1946, Bryce Canyon was completed on 20 Dec. 1949. C 3 type, Ships vary in appearance, Shenandoah is fitted with ASROC and DASH shops, and a helo platform. Sister ship Klondike, AD 22, recommissioned in 1959, and was reclassified as AR 22 on 20 Feb. 1960. Rehabilitation
Isle Royale which had been in reserve status almost ever since she was built by Tacoma-Pacific Shipyard, Inc., Seattle, Washington, and first commissioned on 26 Mar. 1946 was brought forward for rehabilitation in Jan. 1962, recommissioned on 9 June 1962, overhauled in the Long Beach Naval Shipyard, and became ready for fleet service on 1 Jan. 1963. She replaced Hamul.
Photographs
A photograph of Grand Canvon appears to the 1850 St.

photograph of Grand Canyon appears in the 1958-59 to 1961-62 editions.



SHENANDOAH

1963, United States Navy, Official



FRONTIER

1962. Hirovuki Otani

INSHORE FIRE SUPPORT SHIP (IFS)

I Rocket Type

IFS 1 CARRONADE

Displacement: Dimensions:

Guns: Machinery:

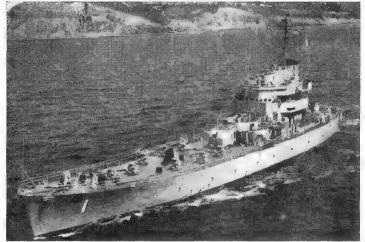
1,040 tons light (1,500 tons full load)
245×39×10 feet
1—5 inch: 8 rocket throwers
Fairbanks-Morse diesels Geared drive. 2 shafts. Controllable pitch propellers. B.H.P.: 3,100=15 kts.
139 (9 officers, 130 men)

Complement:

General

Designed to support troops in amphibious landings, Main armament comprises rapid fire rocket launchers. Bu'lt by Puget Sound Bridge & Dredging Co. Keel laid on 19 Nov. 1952. Launched on 26 May 1953. Commissioned on 25 May 1955. Decommissioned in 1960. Recommissioned in 1965,

Photographs
A larger starboard quarter oblique aerial view of Carronade appears in the 1956-57 to 1959-60 editions.



CARRONADE

1960. United States Navy, Official

General

OCEAN MINESWEEPERS (MSO)

4 New Construction

MSO 524 MSO 523

MSO 525 Displacement: 940 tons

Ocean minesweepers of a new type, but will resemble "Ability" Class. Requested in the Fiscal Year 1966 New Construction Programme.

3 "Ability Class

MSO 520 ALACRITY 521 ASSURANCE Launched 8 June 1957 31 Aug. 1957 Launched 29 Dec. 1956 MSO 519 ABILITY 801 tons light (963 tons full load)
191 (o.a.)×36×11 feet
1—40 mm. AA.
2 G.M. diesels, 2 shafts. Controllable pitch propellers.
B.H.P.: 2,700=15 kts.
71 (6 officers, 65 men) Displacement:

Dimensions:

Guns; Machinery;

General Complement:

General

Non-magnetic, wooden hulled vessels built by Petersen Buildes Inc., Sturgeon Bay, Wisc. Last of the Fiscal Year 1955 New Construction Programme to be awarded. Designed to serve as mine division commander's flagships. Equipped for all types of mine countermeasures operations. Laid down on 5 Mar. 1956, 3, May, 1956, and 28 Jan. 1957, respectively. Launch dates above. Ability commissioned on 14 Aug. 1958. Assurance commissioned on 21 Nov. 1968.

Photographs
A photograph of Alacrity appears in the 1964-65 edition, and of Ability in the 1959-60 to 1965-66 editions.



ABILITY

1966, A. & J. Pavia

MSO 526



ASSURANCE

1965, A. & J. Pavia

4 "Acme" Class

MSO MSO Launched Launched 510 ADVANCE 511 AFFRAY 508 ACME 509 ADROIT 23 June 1955 20 Aug. 1955 12 July 1957 18 Dec. 1956

720 tons light (780 tons full load)
173 (o.o.)×35×10 feet
1—40 mm. AA.
2 Packard diesels. 2 shafts. B.H.P.: 2,800=14 kts. Displacement: Dimensions:

Guns:

Machinery: 50 tons 3,000 miles at 10 kts. 74 Oil fuel:

Radius: Complement:

General General

This class is different from the "Agile" type but have similar basic particulars.

Affray, commissioned on 8 Dec. 1958. Fitted with flagship facilities.



AFFRAY

1966, A. & J. Pavia

1 Special Minesweeper (MSS)

442×57 feet Dimensions: 2—50 cal. M.G. Guns

Being converted under the Fiscal Year 1966 Conversion Programme by American Shipbuilding Co. Liberty ship hull with "over-the-side" propulsion. Former machinery, shafting, propeller and topside structure removed. Hull strengthened. Fitted with high-shock auxiliary equipment.

Ocean Minesweepers-contd.

56 "Agile" Class

421 AGILE (19 Nov. 1955)
422 AGGRESSIVE (4 Oct. 1952)
423 AVENGE (15 Mar. 1953)
424 BOLD (14 Mar. 1953)
425 BULWARK (14 Mar. 1953)
426 CONFLICT (16 Dec. 1952)
427 CONSTANT (14 Feb. 1952)
428 DASH (20 Sep. 1952)
429 DETECTOR (5 Dec. 1952)
430 DIRECT (27 May 1953)
431 DOMINANT (5 Nov. 1953)
432 DYNAMIC (17 Dec. 1952)
433 ENGAGE (ex-Elusive, 18 June 1953)
434 EMBATTLE (27 Aug. 1953)
435 ENDURANCE (9 Aug. 1953)
436 ENERGY (13 Feb. 1953)
437 ENHANCE (11 Oct. 1952)
438 ESTEEM (20 Dec. 1952)
439 EXCEL (25 Sep. 1953)
440 EXPLOIT (10 Apr. 1953)
441 EXULTANT (6 June 1953)
442 FEARLESS (17 July 1953)
443 FIDELITY (21 Aug. 1953)
444 FIRM (15 Apr. 1953)
445 FORCE (26 June 1953)
446 FORTIFY (14 Feb. 1953)
446 FORTIFY (14 Feb. 1953)
447 GUIDE (17 Apr. 1954)
448 ILLUSIVE (12 July 1952) MSO 449 IMPERVIOUS (29 Aug. 1952)
455 IMPLICIT (1 Aug. 1953)
456 IMPLICT (16 Oct. 1953)
456 IMPLICT (16 Oct. 1953)
457 LOYALTY (22 Nov. 1953)
458 LUCID (14 Nov. 1953)
459 NIMBLE (6 Aug. 1954)
460 NOTABLE (15 Oct. 1954)
461 OBSERVER (19 Oct. 1954)
462 PINNACLE (3 Jan. 1955)
463 PIVOT (9 Jan. 1954)
464 PLUCK (6 Feb. 1954)
466 PRIME (27 May 1954)
466 PRIME (27 May 1954)
467 REAPER (25 June 1954)
468 RIVAL (15 Aug. 1953)
478 AGACITY (20 Feb. 1954)
470 SALUTE (14 Aug. 1953)
471 SKILL (23 Apr. 1955)
472 VALOR (13 May 1953)
473 VIGOR (24 June 1953)
474 VITAL (12 Aug. 1953)
478 GALLANT (4 June 1954)
489 GALLANT (4 June 1954)
490 LEADER (15 Sep. 1954)
491 PERSISTANT (23 Apr. 1955)
494 STURDY (28 Jan. 1956)
495 SWERYE (1 Nov. 1955)
496 VENTURE (27 Nov. 1956)
full load) MSO

Displacement: Dimensions: Guns: Machinery:

665 tons light (750 tons full load) 165 (w.l.) 171 (o.a.)×35×11 feet 1—40 mm. AA. 2 Packard diesels. 2 shafts. Controllable pitch propellers. B.H.P.: 2,280×15·5 kts. Dash, Detector, Direct and Dominant have 2 G.M. diesels, B.H.P., 1,200; (Venture has 2 diesels, B.H.P. 1,200) 46 tons 2,400 miles at 12 kts. 72 to 75

Oil fuel: Radius: Complement:

Complement: 72 to 75

General
These ships have wooden hulls and non-magnetic equipment, with diesels of non-magnetic stainless steel alloy. Aggressive, AM 422, was built by Luders Marine Const. Co., Stamford, Conn. Cost \$3,500,000. Laid down on 25 May 1951, commissioned on 25 Nov. 1953. Illusive, AM 448, was built by Martinlock S.B. Co., San Diego, and commissioned on 14 Nov. 1953, Bold, AM 424, and Bulwark, AM 425, were built by Norfolk Naval Shipyard, and the remainder by private yards. All the above vessels, formerly known as Minesweepers (AM) were reclassified as Minesweepers, Ocean (Non-magnetic) (MSO) in Feb. 1955. Launch dates above. A total of 100 were built in the U.S.A. for the U.S. Navy and the Mutual Defence Assistance Programme.

Photographs
Of Direct in the 1955-56 edition, Exultant in the 1956-57 and 1958-59 editions, Vital in the 1957-58 edition, Pinnacle in the 1957-58 to 1959-60 editions, Nimble in the 1958-59 and 1959-60 editions.

Transfers
Nos. 450-454, 475-487, 498-507, 512-518 were built for foreign countries under the Military Aid Programme and no U.S. names were allocated. 8 were transferred to France, 6 to the Netherlands, 4 to Portugal, 4 to Belgium, 2 to Norway, and 2 to Italy.

MSO Nos. 506 and 507 launched on 13 Nov. 1954 and 19 Feb. 1955, respectively, were transferred to Italy in 1956. MSO 522, built by Petersen Builders Inc., under the F.Y. 1958 Programme, similar to MSO 512 class, was transferred to Belgium in Dec. 1960.

Casualities Presilge, MSO 465, was stranded in the Naruto Straits, Inland Sea, Japan, on 23 Aug. 1958, abandoned as a total loss, and stricken from the Navy List. Exultant caught fire after an explosion off the coast of Savannah, Georgia, on 12 Aug. 1960, but has been repaired. Stalwart, MSO 493, capsized and sank as a result of fire at San Juan, Puerto Rico, in July 1966. To be salvaged.



VITAL

Added 1960, Wright & Logan



PINNACLE

1960, Skyfotos

FLEET MINESWEEPERS (MSF)

44 "Auk" Class. (Large Type)

6 American S.B. Co.

MSF 116 SPEED (18 Apr. 1942) 384 SPRIG (15 Sep. 1944) 114 STAFF (17 June 1942) 118 STEADY (6 June 1942) 386 TERCEL (16 Dec. 1944) 390 WHEATEAR (21 Apr. 1945)

2 Associated Shipbuilders

322 SPEAR (25 Feb. 1943) 324 VIGILANCE (5 Apr. 1943)

3 Defoe B. & M. Works

58 BROADBILL (21 May 1942) 60 NUTHATCH (16 Sep. 1942) 61 PHEASANT (24 Oct. 1942)

13 General Engineering & DD. Co.

340 ARDENT (22 June 1943)
314 CHAMPION (12 Dec. 1942)
315 CHIEF (5 Jan. 1943)
316 COMPETENT (9 Jan. 1943)
317 DEFENSE (18 Feb. 1943)
318 DEVASTATOR (19 Apr. 1943)
319 GLADIATOR (7 May 1943)
100 HEED (19 June 1942)
101 HERALD (4 July 1942)
320 IMPECCABLE (21 May 1943)
102 MOTIVE (17 Aug. 1942)
103 ORACLE (30 Sep. 1942)
64 STARLING (11 Apr. 1942) 1943) 7 Gulf S.B. Corbn.

7 Gulf S.B. Corpn.
MSF
341 DEXTROUS (17 Jan. 1943)
379 ROSELLE (29 Aug. 1945)
381 SCOTER (26 Sep. 1945)
126 TOKEN (28 Mar. 1942)
127 TUMULT (19 Apr. 1942)
128 VELOCITY (19 Apr. 1942)
131 ZEAL (15 Sep. 1942)

2 John H. Mathis Co.

120 SWAY (29 Sep. 1942) 122 SWIFT (5 Dec. 1942)

Norfolk Navy Yard

55 RAVEN (24 Aug. 1940)

2 Pennsylvania Shipyard

104 PILOT (5 July 1942) 105 PIONEER (26 July 1942)

6 Savannah Machine & Foundry Co.

AG 176 PEREGRINE ex-MSF 373 (17 Feb. 1945) 374 PIGEON (28 Mar. 1945) 375 POCHARD (11 June 1944) 377 QUAIL (20 Aug. 1944) 123 SYMBOL (2 July 1942) 124 THREAT (15 Aug. 1942)

2 Winslow Marine Ry. & S.B. Co.

110 REVENGE (ex-Right, 7 Nov. 1942) 111 SAGE (21 Nov. 1942)

Displacement: Dimensions: Guns: Machinery: Complement:

890 tons standard (1,250 tons full load)
215 (w.l.), 221\(\frac{1}{2}\) (o.a.) \times 32\(\frac{1}{2}\) \times 10\(\frac{3}{2}\) feet
1—3 inch, 50 cal. d.p., 2 or 4—40 mm, AA.
Diesel electric. 2 shafts. B.H.P.: 3118—3,532=18 kts.
Accommodation for 105 to 117

Steel hulled. All except Perigrine, AG 176, ex-EMSF 373, (experimental) are in the Atlantic and Pacific Reserve Fleets. Raven is of slightly different type (full particulars and photograph in the 1957-58).

Reclassification

Reclassification
All the above, formerly known as Ocean Minesweepers (AM) were reclassified as Minesweepers, Fleet (steel-hulled) MSF in Feb. 1955.

Prevail (AM 107), Pursuit (AM 108), Requisite (AM 109) and Sheldrake (AM 62) were reclassified as survey ships (AGS) in 1952 and Towhee (MSF 388) in Apr. 1964. Surfbird (MSF 383) was reclassified as a degaussing vessel (ADG) on 18 May 1957. Tanager, MSF 385, was transferred to the Coast Guard on 1 Nov. 1963.

Experimental Peregrine is experimental. Designation EMSF 373 changed to AG 176 on 1 Apr. 1964. Photographs Larger photographs of Roven and Sprig in the 1957-58 and earlier editions, of Revenge in the 1957-58 to 1959-60 editions, of Pilot in the 1959-60 edition.

Transfers
Strive, MSF 117, Sustain, MSF 119, Seer, MSF 112, and Triumph, MSF 323, converted and reclassified as coastal minelayers MMC 1, MMC 2, MMC 5 and MMC 3, respectively, transferred to Norway in 1959-60, Ruddy, MSF 380, and Shoveler, MSF 382, to Peru in 1960, Ptarmigan, MSF 376, to Korea on 25 July 1963, Murrelet, MSF 372, to Philippines in June 1965, Redstart, MSF 378, Toucan, MSF 387, to Taiwan on 22 Dec. 1964 and Waxwing, MSF 389, in Aug. 1965. Chickadee, MSF 59, was transferred to Uruguay at San Diego in Aug. 1966, on loan under the Military Aid Programme.
Disposals
Auk, MSF 57. was stricken for

Auk, MSF 57, was stricken from the list of naval vessels on 1 Aug. 1959.



Ted Stone



OUAIL

Added 1960, Ted Stone

Fleet Minesweepers-contd. 'Auk'' Class-contd.



PERFGRINE

1966, (direct from Commanding Officer, U.S.S. Perigrine)

12 "Admirable" Class. (Medium Type)

6 Associated Shipbuilders

MSF 304 SCURRY (ex-Skurry, 11 Oct. 1943) 306 SPECTER (15 Feb. 1944) 307 STAUNCH (15 Feb. 1944) 308 STRATEGY (28 Mar. 1944) 309 STRENGTH (28 Mar. 1944) 311 SUPERIOR (11 May 1944)

I Tampa S.B. Co., Inc.

MSF 215 CRUISE (21 Mar. 1943) 3 Williamette Iron & Steel Corpn. 165 COUNSEL (17 Feb. 1943) 362 GADWALL (15 July 1943) 364 GRAYLAG (4 Dec. 1943)

l Gulf S.B. Corpn.

1 Winslow Marine Rly. & S.B. Co.

1X 305 PROWESS ex-MSF 280 (17 Feb. 1944) T 240 HAZARD (21 May 1944)

General

Steel Hulled. Appearance varies according to the builders. Some have a funnel. Cruise, completed by Charleston Navy Yard, was armed with only 2—40 mm. guns. All in the Atlantic Reserve Fleet except Counsel, Pacific Reserve Fleet, and Prowess, employed as a naval reserve training ship and redesignated IX 305 on 18 Feb. 1966. Photographs

A larger photograph of Jubilant appears in the 1955-56 to 1959-60 edition, and of the no funnel type in the 1957-58 to 1965-66 editions.

Reclassification

Reclassification
All the above minesweepers, formerly known as Fleet Minesweepers (AM) were reclassified as Minesweepers, Fleet (steel hulled) MFS in Feb. 1955.
Transfers
34 of this class were transferred to the Soviet Navy in 1943, and 13 to the Chinese Navy. Gayety, MSF 239, and Sentry, MSF 299, were transferred to the Vietnamese Navy in June 1962 and Aug. 1962, respectively, under the Military Aid Programme, and Serene, MSF 300, and Shelter, MSF 301, in Jan. 1964. Crag. MSF 214, Device, MSF 220, Diplama, MSF 221, Dour, MSF 223, Eager, MSF 224, Execute, MSF 232, Eaglity, MSF 233, Hilarity, MSF 241, Instill, MSF, 252, Intrigue, MSF 253, Invade, MSF 254, Jubilant, MSF 255, Knave, MSF 256, Ransom, MSF 283, Rebel, MSF 284, Recruit, MSF 365, were sold to Mexico in Oct. 1962. Report, MSF 289, was transferred to the Army in Apr. 1963. Creddock, MSF 356, was stricken on 1 Feb. 1966 for possible transfer to Burma. Signet, MSF 302, and Skirmish, MSF 303, were reported sold to the Dominican Republic on 13 Jan. 1965.

Losses
Salute, AM 294, was lost in the Second World War. Pirate (AM 275) and Pledge
(AM 277) of this class struck mines and sank off Wonsan, Korean east coast, on
12 Oct. 1950.

(AM 277) of this class struck mines and sank off Wonsan, Korean east coast, on 12 Oct. 1950.

Recent Disposals

Control, MSF 164, was stricken from the Navy List on 13 Mar. 1958 and disposed of in 1959. Clamour, MSF 160, Climax, MSF 161, Compel, MSF 162, Concise, MSF 163, Incredible, MSF 249, Mainstay, MSF 261, Reign, MSF 288, Dipper, MSF 357, and Harrier, MSF 366, were stricken on 1 Dec. 1959, Change, MSF 159, Density, MSF 218, Design, MSF 219, Garland, MSF 238, Opponent, MSF 269, and Scrimmage, MSF 297, at the end of 1960, Inaugural, MSF 242, in 1941 Disposals of Auxiliay Minelayers

Disposals of Auxiliay Minelayers
Of the auxiliary minelayers of the ex-Army mineplanter type, MMA 11, Camanche (ex-MP 21, Brigadier General Royal T. Frank), MMA 12, Canonicus (ex-MP 10, Major General Erasmus Weaver), MMA 13, Miantonomah (ex-MP 14, Colonel Horace F. Spurgeon), MMA 14, Monadnock (ex-Mojor Samuel Ringald), and MMA 15, Nausett (ex-MP 7, Major General Wallace F. Randolph), were all stricken from the Navy List in 1960, and Puritan, MMA 16 (ex-MP 13, Colonel Alfred A. Maybach) was stricken on 1 Nov. 1959.



INCREDIBLE (funnel type)

1960, United States Navy, Official

ESCORTS (PCE and PCER)

10 "180" ft. Steel Type

PCE	Launched	PCER	Launched
856 WHITEHALL	21 Apr. 1944	E 849 SOMERSWORTH	31 Jan. 1944
877 HAVRE	11 Aug. 1943	E 850 FAIRVIEW	8 Feb. 1944
880 ELY	27 Oct. 1943	E 851 ROCKVILLE	22 Feb. 1944
902 PORTAGE	28 Aug. 1943	853 AMHERST	18 Mar. 1944
		E 855 REXBURG	10 Apr. 1944
		E 857 MARYSVILLE	4 May 1944

Displacement: Dimensions: Guns:

640 tons standard (903 tons full load)
180 (w.l.) \cdot 184\frac{1}{2} (o.a.) \times 33 \times 9\frac{1}{2} feet
1—3 'nch d.p., 6—40 mm. AA. 4 D.C.T. (most PCER type are unarmed)
Diesel. 2 shafts, B.H.P.: 1,800 to 2,400=15 kts.
60 (5 officers, 55 men)

Complement:

Complement:
General
Built by Pulman Standard Mfg. Co., Albina Engine & Machinery Works and Willamette Iron and Steel Corpn. During the Second World War the "PCER" type carried hospital equipment and personnel, with accommodation for 57 patients. PCE 873-898 were redesignated PCEC, reassigned to amphibious forces, and had additional equipment installed as Control Escorts, but the remaining PCEC were again reclassified as PCE on 27 Oct. 1955. The 25 surviving PCE and PCER were named on 15 Feb. 1966. Whitehall was reclassified from PCER to PCE in Mar. 1962. The four remaining PCEs and Amherst are Naval Reserve training ships. Experimental

Experimental
The six vessels now used for experimental purposes, Nos. 849, 850, 851, 852, 855, and 857 were redesignated as EPCER in 1959. Marysville was fitted with a 800 ft thermistor chain in 1966.
Photographs
A photograph of Battleboro, PCER 852, appears in he 1949-50 to 1958-59 editions, of Gettysburg, PCE 904, in the 1952-53 to 1959-60 editions, of Rexburg.
EPCER 855 in the 1959-60 to 1961-62 editions.

Transfers
Eunice, PCE 846, and Pascagoula, PCE 874, to Ecuador in 1960, several PCE to China, Cuba and Mexico, PCEC 873, PCEC 882, PCEC 896 and PCEC 898 to Korea, PCEC 873 and PCEC 898 to Korea in 1956 and PCEC 882 and PCEC 896 in Feb. 1955, Crestview, PCE 895 to Vietnam on 29 Nov. 1961, Batesburg, PCE 903, Dania, PCE 870. Marfa, PCE 842, and Somerset, PCE 892, to Korea on 9 Dec. 1961, Lamar, PCE 899, to the Coast Guard on 1 June 1964, Worland, PCE 845, to the State of North Carolina on 6 June 1964, Farmington, PCE 894, to Burma on 31 May 1965, Battleboro to Vietnam in 1966.

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AMHERST

1966, United States Navy, Official



FAIRVIEW (PCER Type)

1962, Mr. S. P. Ryan



WORLAND (PCE Type)

1960, United States Navy, Official

SUBMARINE CHASER (PCH)

I Hydrofoil Type

PCH 1 HIGH POINT

110 tons
115 (o.a.)×31 feet, Draught: 6 to 17 feet
2—50 cal MG (twin)
4—21 inch torpedo tubes (2 twin), D.C.T.
2 Bristol Siddeley Marine Proteus gas turbines. 2 shafts.
5.H.P.: 6,200=48 kts. (max.)
Auxiliary diesel propulsion, B.H.P.: 600=12 kts. cruising Displacement: Guns: A/S weapons:

Machinery:

13 (1 officer, 12 men)

Complement: General

General

Hydrofoil submarine chaser, prototype of future anti-submarine warfare patrol craft, for harbour surveillance, harbour approaches, and coastal water out to 200 miles. The largest operational naval hydrofoil in the world. Equipped with machine guns, torpedoes, depth charges and sonar gear. Aluminium hull, Four propellers, two pushing, two pulling, fitted on retractable hydrofoils, Forward foil single strut, after foil two struts. Struts extend over 14 ft. below hull. With foils retracted draught is about 6 ft. Diesel with retractable propeller. Two sonars and magnetic detection equipment intalled. Provided for under the Fiscal Year 1960 Program. Cost \$3,700,000. Named after High Point, North Carolina. Construction

Construction

Designed by W.C. Nickum & Sons, Seattle, Wn. Built jointly by Boeing Aircraft Corpn., Seatle, Wn., and J. M. Martinac, Tacoma, Washington, at Martinac's Tacoma Yard. Laid down on 27 Feb. 1961. Launched on 17 Aug. 1962. Completed and placed in service on 3 Sep. 1963.



HIGH POINT

1963, United States Navy, Official

Hydrofoil Test Vehicle

DENISON

Displacement: 90 tons 117 feet Dimensions:

Machinery: Gas turbines. H.P. 14,000=62 kts.

Hydrofoil craft built as a test vehicle for \$5,000,000 by Grumman Aircraft Engineering Corp., Bethpage, Long Is, N.Y. for Maritime Administration in 1962. Engined by General Electric Corpn. All aluminium hull, lightweight machinery. Transferred to the U.S. Navy at Oyster Bay, L.I. N.Y. on 27 Aug, 1965 and assigned to Pacific Missile Range, Pt. Mugu, Calif. To be used to transport personnel and supplies to offshore islands and in the sea test range in area clearance and rescue work.

Submarine Chasers (PC)
Sole survivor of a very numerous class of some 270 units, Weatherford, experimental and designated EPC, was decommissioned in Sep. 1965 and stricken from the Navy List on 1 Nov. 1965, the last of the Second World War PCs in the United States Navy.

Transfers
PC 1086, 1130, 1139, 1143, 1144, 1146, 1176, 1171 were transferred to France PC 1086, 1130, 1139, 1143, 1144, 1146, 1176, 1171 were transferred to France in 1951 and sent to Indo-China. (They were later returned, and PC 1086 and PC 1171 transferred to Cambodia and the others to Viet Nam.) PC 485 and PC 610 were transferred to Korea, PC 495, 570, 575, 609, 616, 1185, 1218 and 1253 to Thailand, PC 786, 1078, 1168, 1182, 1208, 1232, 1233, 1254 and 1262 to Taiwan China in 1954, PC 622 to Greece in 1954, Placerville, PC 1087, Hanford, PC 1142, Susanville, PC 1149, Escondido, PC 1169 and Vandalla, PC 1175, to Taiwan China in July 1957, Pierre, PC 1141, to Indonesia on 25 Oct. 1958, Milledgeville, PC 1263, to Taiwan China on 1 July 1959, Maivern, PC 580, and Manville, PC 581, to Indonesia in Mar. 1960, Anacortes, PC 1569, to Viet Nam in 1960, Grosse Point, PC 1546, and Winnemucca, PC 1145, to Korea in 1960, Cooperstown, PC 484, Dalhart, PC 619, Edenton, PC 1077, Gilmer, PC 565, Honesdale, PC 566, Larchmont, PC 487, Lenoir, PC 582, Minden, PC 1176, Paragould, PC 465, Rolla, PC 483, Tarrytown, PC 1252, and Toocle, PC 572, to Venezuela in 1961, Altus, PC 568, and Riverhead, PC 567, to the U.S.A.F. in 1963, Chadron, PC 564 to Korea in Nov. 1963.
Disposals

Andrews, PC 606, Beeville, PC 617, Bethany, PC 620, Bluffton, PC 416, Canan-

Chadron, PC 564 to Korea in Nov. 1963.

Disposals

Andrews, PC 606, Beeville, PC 617, Bethany, PC 620, Bluffton, PC 416, Canandaigua, PC 1246, Corinth, PC 1547, Fredonia, PC 1174, Greencastle, PC 1119, Kerrville, PC 597, Malone, PC 553, Munising, PC 1228, Oberlin, PC 560, Waverly, PC 1225, and Wauseon, PC 1229 were stricken from the Navy List in 1957, PC 586, Patchogue, PC 555, Houghton, PC 589, Metropolis, PC 592, Towamda, PC 776, Pikcville, PC 777, Waynesburg, PC 778, Gallipolis, PC 779, Mechanisburg, PC 780, Maynard, PC 781, Metuchen, PC 782, Glenolden, PC 785, Frostburg, PC 808, Ripley, PC 817, Welch, PC 822, Asheboro, PC 1120, Carlinville, PC 1125, Cordele, PC 1135, Canastota, PC 1136, Galena, PC 1137, Worthington, PC 1138, Lapeer, PC 1181, Wildwood, PC 1186, Galena, PC 1191, Bel Air, PC 1193, Ridgway, PC 1196, Mayfield, PC 1198, Westerly, PC 1201, Kittery, PC 1209, Medina, PC 1212, Lourinburg, PC 1213, Loudon, PC 1216, Elkins, PC 1230, Grinnell, PC 1237, Abingdon, PC 1240, Cullpeper, PC 1242, Port Clinton, on 1 Apr. 1959, Jasper, PC 486, on 1 May 1959, ard Anoka, PC 571, Kewaunee, PC 1178, and Durango, PC 1260, on 1 Nov. 1959, Carmis, PC 466, Antigo, PC470, Petoskey, PC 569, Wapakoneta, PC 579, Arcata, PC 601, Alturas, PC 602, Solvay, PC 603, Ludington, PC 1079, Cadiz, PC 1081, Glenwood, PC 1140, Kelsa, PC 1179, Woodstock, PC 1180, Tipton, PC 1231, Martinez, PC 1244, Ukiah, PC 1251, in 1960.

Loss

PC 485, transferred to Korea, was stricken on 1 Mar. 1964 after being sumk

PC 485, transferred to Korea, was stricken on 1 Mar. 1964 after being sunk

SUBMARINE CHASERS (PCS)

2 "136" ft. Wooden Type

PCS 1385 HOLLIDAYSBURG

1387 E
251 tons standard (338 tons full load)
136×24½×8½ feet
1—3 inch d.p., 1—40 mm. AA., 2—20 mm. AA.
D.C.T.
2 G.M. diesels. B.H.P.: 1,000=14 kts. Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Complement:

These survivors of a class of 52 units were completed in 1944. All PCS were named on 15 Feb. 1956. Employed as naval reserve training ships.

Five vessels of this class were reclassified as minesweepers with names and designations Sanderling, AMS 35, Swallow, AMS 36, Swan, AMS 37, Verdin, AMS 38, Waxbill, AMS 39, but in Mar. and Feb. 1955 Sanderling, AMS 35, and Waxbill, AMS 39, were reclassified as minesweepers AMCU 49 and AMCU 50, respectively, and again redesignated when minehunters were reclassified MHC. Swallow, Swan and Verdin were redesignated MSC(O) on 7 Feb. 1955. Former PCS 1465 was named Minah MHC (ex-AMCU) 14.

PCS 1426 and PCS 1448 were loaned to Republic of Korea Navy on 9 June 1952 and PCS 1445 and PCS 1446 on 26 May 1952, but PCS 1426 was returned to the U.S. Navy in Apr. 1963 and stricken from the list.

Disposals
Attica, PCS 1383, and Coquille, PCS 1400, were scrapped in 1957. Conneaut, PCS 1444,
Deming, PCS 1392, Eufaula, PCS 1384, Provincetown, PCS 1378, Rushville, PCS 1380, and
Winder, PCS 1378, were stricken from the Navy List in 1957. Hampton, PCS 1386, was
stricken on I July 1959. Elsmere, PSC 1413, was disposed of in 1961. Prescott, PCS 1423,
was stricken on I Mar. 1962, McMinnville, PCS 1401 in Aug. 1962, and Grafton, PCS 1431, on
I June 1965.



BEAUFORT

United States Navy, Official

COASTAL MINEHUNTERS (MHC)

I "Bittern" Class

MHC 43 BITTERN

300 tons standard (360 tons full load)
138 (pp.), 144½ (o.a.)×28×8 feet
1—40 mm. AA.
Diesels. 2 shafts. B.H.P.: 1,200=14 kts
44 (4 officers, 40 men) Displacement: Dimensions: Guns: Machinery: Complement:

General
This prototype Mine Hunter (MHC) of wooden construction was built by the Consolidated Shipbuilding Corporation, New York City, at a cost of \$1,782,107, under the 1954 Fiscal Year program. Designed to locate mines and other underwater obstacles, rather than to sweep them. To accomplish this she was equipped with various types of electronic instruments in place of minesweeping gear found in coastal minesweepers. To be mass produced in the event of mobilisation. Three more were to have been built under the 1955 Naval Appropriations, but were not started. Built of non-magnetic materials, with bronze aluminium and stainless steel fittings. Bittern was laid down on 18 Aug. 1955. launched on 4 Mar. 1957 and commissioned on 26 Aug. 1957.

The converted coastal minehunter Bunting, MHC 45, was transferred to Brazil in lune 1960,

Disposals

All 29 of the converted minehunters of the underwater locator type (8 former coastal minesweepers of the YMS class and 21 former large infantry landing ships of the LSIL class) were stricken on 1 Nov. 1959 or 1 Jan. 1960. See names, former numbers, and full particulars on page 433 of the 1959-60 edition.



RITTERN

1960. United States Navy, Official

COASTAL MINESWEEPERS (MSC)

22 "Bluebird" Class

MSC 204 205 THRUSH VIREO WARBLER MSC T BLUEBIRD CORMORANT FALCON FRIGATE BIRD HUMMING BIRD MSC 195 LIMPKIN 196 MEADOW LARK 197 PARROT 198 PEACOCK 199 PHOEBE 122 206 207 208 WHIPPOORWILL WIDGEON WOODPECKER 209 JACANA KING BIRD E 201 SHRIKE T 203 THRASHER ALBATROSS GANNET

Displacement: Dimensions: Guns: Machinery:

320 tons light (370 tons full load) 138 (pp.), 144 (o.a.) \times 28 \times 8½ feet 2—20 mm. 2 G.M. diesels. 2 shafts. B.H.P.: 880—13 kts. (MSC 200-209). Packard engines. 2 shafts. B.P.H.: 1,200=14 kts. (MSC 121, 122, 190-199) 4 Harnischfeger 6-cyl diesels (Albatross, Gannet) 25 tons 2,500 miles at 10 kts. 39

Oil fuel: Radius: Complement:

Constructed throughout of wood and other materials with the lowest possible magnetic attraction to attain the greatest possible safety factor when sweeping for magnetic mines. Bluebird and Cormorant (commissioned 14 Aug. 1953) built by Mare Island Naval Shippard 310 tons light. Only named vessels AMS 121, 122, 190-209 were commissioned into the U.S. Navy. Remainder, 60-120, 123-154, 167-171, 218-221. 255-288 were built for NATO or foreign countries under MDAP.

E. Shrike is experimental. T. Assigned to Na /al Reserve training

PCS 1387 BEAUFORT

Transfers
18 to Italy: AMS 72-76, 79-82, 88-90, 113-137, 280. 18 to Belgium: AMS 63-65, 77, 78, 101
103, 104, 131, 151-154, 169-171, 259, 260. 8 to Denmark: AMS 127, 128, 129, MSC 221, 256, 257, 263, 264. 30 to France: AMS 671, 83-87, 93, 94, 96-99, 113-120, 124-126, 141-142. 14 to Netherlands: AMS 100, 105-112, 148-150, 167, 168. 2 to Norway: AMS 102, 132. 8 to Portugal: AMS 60 (ex-U.S.S. Adjutant), 61, 62, 91, 92, 145-147. 12 to Spain: AMS 103, 139, 143, 220, 265, 266, MSC 200 (ex-U.S.S. Redwing), MSC 202 (ex-U.S.S. Spoonbill), MSC 269, 279, 287, 288. 4 to Japan: AMS 95, 144, 255, 258. 8 to Pakistan: AMS 138, 261, 262, 267, 273, 274, 293, 294. 8 to Tarkey: 268, 270, 271, 272, 304, 305, 311, 312. 4 to Iran: MSC 275, 276, 291, 292. 8 to Taiwan, China: AMS 123, 140, MSC 277, 278, 300, 302, 306, 307. 3 to Vietnam: MSC 281, 282, 283. 5 to Korea: MSC 284, 285, 286, 295, 296. 2 to Philippines: MSC 218, 219. 5 to Greece: MSC 298, 299, 308, 309, 310. 4 to Thailand: MSC 297, 301, 303, 313.

Cancellation
AMS 155 to 166 were reserved for German built vessels, but the order and numbers were cancelled.

Reclassification
All the early vessels formerly known as Auxiliary Motor Minesweepers (AMS) were reclassified as Minesweepers. Coastal (MSC), in Feb. 1955.

Production
More than 160 MSC were built in the U.S.A. for the U.S. Navy and MDAP.

Construction

Construction
Bellingham Shipyards Company, Washington, built MSC 268-272 and MSC 273-288 for foreign countries under the Military Assistance Programme. Two were built by Tacoma Boatbuilding Co., Tacoma, Washington:—Albatross, laid down on 26 Feb. 1959, launched on 26 Mar. 1960, and completed on 24 Apr. 1961, and Gannet, laid down on 1 May 1959, launched on 2 June 1960, and completed on 14 July 1961. MSC 291 was launched on 3 Mar. 1961 at Tacoma for MDAP. Two were built by Petersen Builders Inc., Sturgeon Bay, Wisc., with 4 diesels driving two fixed-pitch propellers, and gas turbine generators for power minesweeping (MSC 292 and 293, for MAP) and MSC 294, 295, 296 and 297 for MAP, 145×27 feet, 362 tons full load. Tacoma Boatbuilding Co. built MSC 298-301; Stowman Shipbuilding Corp., N.J., built MSC 302-306; Petersen Builders built MSC 307-315. MSC 315 was launched on 12 Jan. 1966: 145½×27½ feet, 2 shafts, 4 diesels=1,000 H.P.

A port broadside view of Bluebird appears in the 1955-56 and 1956-57 editions, a port quarter oblique aerial view of Jacana in the 1957-58 edition, and a port bow oblique aerial view of Cormorant in the 1958-59 to 1961-62 editions.



ALBATROSS

1962, United States Navy, Official

Disposals and Reclassification of Motor Torpedo Boats

The four experimental motor torpedo boats of differing designs, PT 809, PT 810, PT 811, and PT 812, were stricken from the active list on 1 Nov. 1959 and reclassified as boats and not as service craft, naval vessels as before; but PT 810 and PT 811 were reactivated, redesignated PTF 1 and PTF 2 (fast patrol boats) and placed in active service with the fleet on 21 Dec. 1962, see next page, ex-PT 809 serves as "guard boat" for Presidential yachts at Washington, D.C., and ex-PT 812 was transferred to the U.S. Army at Philadelphia in Mar. 1963.

The wartime motor torpedo boats PT 616, PT 619 and PT 620, loaned to Korea in 1952, were also deleted from the list on 1 Nov. 1959.

COASTAL MINESWEEPERS (MSCO)

8 "Albatross" Class

MSCO MSCO MSCO
47 FULMAR (ex-YMS 193) 49 LORIKEET (ex-YMS 271) 54 RUFF (ex-YMS 327)
24 LINNET (ex-YMS 395) 33 PLOVER (ex-YMS 442) 58 SISKIN (ex-YMS 425)
51 REEDBIRD (ex-YMS 291) 56 TURKEY (ex-YMS 444)

Displacement: Dimensions:

Guns:

270 tons standard (250 tons full load) $136\times24\frac{1}{2}\times8$ (max.) feet 1-40 mm. AA. 2 D.C.T. 2 G.M. diesels. 2 shafts. B.H.P.: 1,000=15 kts. A/S weapons: Machinery: Oil fuel: tons

5.500 miles at economical speed Radius:

Complement: 34 (4 reserve officers, 9 regular men, 21 reserve men)

General General

Coastal motor minesweepers of wooden construction. All launched in 1942-43. formerly known as Auxiliary Motor Minesweepers (AMS). Reclassified as Minesweepers. Coastal (old), MSC(O), in Feb. 1955. Magple (AMS 25) and Partridge (AMS 31) of this class struck floating mines and sank off the Korean east coast on 1 Oct. 1950 and 2 Feb. 1951, respectively. Bobolink, Bunting, Gull, Merganser, Redhead, Sanderling and Waxbill were converted into coastal minehunters in 1945-55. The eleven surviving boats of this formerly very numerous class were assigned to the mine warfare selected reserve programme in 1960 with reserve crews.

Only one-funnelled boats of this class now remain on the list, the two-funnelled boats and the no-funnel boats having been stricken, see below.

Transfers Chatterer, Condor, Firecrest, Heron, Osprey, Pelican and Swallow were transferred to Japan in 1955. Many units of this type will be found also in other navies. Curlew, Kite and Mocking-blid were loaned to Korea on 6 Jan. 1956, Hummer, MSCO 20, and Lark, MSCO 23, were transferred to Japan in 1959, Cardisal, MSCO 4, and Egret, MSCO 46, to Brazil at Charleston, S.C., on 15 Aug. 1960 under MDAP, Jackdaw, MSCO 21, in Jan. 1963 and Grackle, MSCO 13, later in 1963. Disposals

Disposals
Albatross, MSCO 1, and Hawk, MSCO 17, were stricken from the Navy List in 1958. Redpoll, MSCO 57, on 1 July 1959. Cardinal, MSCO 4. Courser, MSCO 6. Crow, MSCO 7, Flamingo, MSCO 11, Goldfinch, MSCO 12, Grosbeak, MSCO 14, Hornbill, MSCO 19. Ostrich, MSCO 29, Swan, MSCO 37, Verdin, MSCO 38, Barbet, MSCO 41, Brambling, MSCO 42, Brant, MSCO 43, Courlan, MSCO 43, Crossbill, MSCO 45, Egret, MSCO 46, Lapwing, MSCO 48, Nightingale, MSCO 50, Rhea, MSCO 52, and Seagull, MSCO 55, on 1 Nov. 1959, Flicker, MSCO 9, and Jackdaw, MSCO 21, on 1 Jan. 1960, Robin, MSCO 53, in Aug. 1961, Grouse, MSCO 15, was destroyed after grounding at Rockport, Mass. on 21 Sep. 1963.



SEAGULL

1960, United States Navy, Official

INSHORE MINESWEEPERS (MSI)

2 "Cove" Class

MSI 1 COVE

MSI 2 CAPE

120 tons light (249 tons full load)
111½×23×5½ (10 max.) feet
2 G.M. Diesels. 1 shaft. B.H.P.: 650=12 kts.
21 (3 officers, 18 men) Displacement: Dimensions: Guns:

Complement:

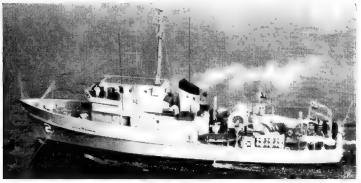
Provided under the 1956 Naval Appropriations. Prototypes to replace, MSCs on inshore minesweeping duties. Similar in mission and construction to Minesweeping boats (MSB), see later page, but considerably larger. Cost \$750,000 plus \$350,000 for equipment Construction

Both built at the Bethlehem Shipyards Co., Bellingham, Washington, Laid down on 1 Feb. 1957 and 1 May 1957, respectively, launched on 8 Feb, 1958 and 5 Apr. 1958 and placed in service on 20 Nov. 1958 asd 27 Feb, 1959, respectively. MAP Program

MAP Program

MSI 3 to MSI 10 were built under the off-shore procurement program for MDAP. In Mar. 1962 Tacoma Boatbuilding Co. were awarded a contract for 2 MSI, 111×23 feet, 235 tons full load, for MAP. These, MSI 13 and MSI 14, were transferred to Iran under MAP in 1964. MSI 15 to 19 were built by Peterson Builders in 1965-66.

Photographs A larger port broadside view of Cove appears in the 1959-60 edition.



CAPE 1960, courtesy Mr. W. H. Davis

HYDROFOIL GUNBOATS (PGH)

2 New Construction

Authorised in the 1966 Programme, Design and construction contract awarded to Boeing Aircraft Corpn., Seattle, for one prototype for \$3,800,000. Additional contract awarded to Grumman Aircraft for one PGH prototype.

GUNBOATS (PGM)

7 + 10 New Construction

PGM 84 ASHEVILLE 85 GALLUP

PGM
86 ANTELOPE
87 READY
89 MARATHON
90 CANON
225 tons standard (240 tons full load)
155 (o.a.) × 23½ × 9½ (max.) feet
1—3 inch, 50 cal.; 1—40 mm. AA.; 2—50 cal. M.G.
CODAG (combined diesel and gas turbine). 2 diesels,
H.P.: 1,750=37 kts. cruising plus I gas turbine, H.P.:
1,750 miles at 16 kts.; 325 miles at 35 kts.
24, (3 officers, 21 men).
3, of aluminium

Guns: Machinery:

Displacement: Dimensions:

Radius: Complement: General General A new class of gunboats, of aluminium construction with a schedulel eventual total of 24 boats. The new design emphasises cruising endurance, seaworthiness and payload capability to provide a relatively high speed craft with maximum simplicity and ease of maintenance compatible with these features. PGMs are the largest all-aluminium hulls in the U.S. Navy. Asheville was laid down on 15 Apr. 1964 and launched on 1 May 1965. Gallup was laid down on 27 Apr. 1964 and launched on 15 June 1965. All built by Tacoma Boatbuilding Co., Inc. Wash. Antelope and Ready authorised in F.Y. 1964, were laid down on 10 May and 20 May 1965. PGM 88, 89 and 90 authorised in 1965, PGM 92 to 101 in 1966.



ASHEVILLE

1966, courtesy Mr. A.W. Harris

FAST PATROL BOATS (PTF)

Displacement: Dimensions: Guns: Machinery: Complement:

PTF 8 PTF 10 PTF 11 PTF 12 64 tons light, 69 tons standard (76 tons full load)
75½ (pp.), 80½ (o.a.) × 24½ × 6½ feet
2—40 mm. AA. (single); 2—20 mm. AA. (single)
2 Napier-Deltic diesels. B.H.P.: 6,200=45 kts.
19 (3 officers, 16 men)

General
Built by Boatservice Ltd. A/S, Mandal, Norway, PTF 3 and PTF 4 were delivered to the U.S.A. in Dec. 1962 and armament and electronic equipment installed in the U.S.A. in 1963. PTF 5, 6, 7 and 8 were acquired and designated on 1 Mar. 1964, of PTF 9, 10, 11, 12, 13, 14, 15 and 16 (announced) on 2 Sep. 1964. PTF 4 was stricken from the Navy List in 1965, and PTF 9, PTF 14 and PTF 15 in 1966, PTF 1 and PTF 2 were stricken on 1 Aug. 1965, and expended as targets.



1965, Boatservice Ltd. A/S

HYDROFOIL RESEARCH SHIP

AGEH I PLAINVIEW

Complement:

Displacement: Dimensions: Machinery:

310 tons full load 220 (o.a.)×40 $\frac{1}{2}$ ×10 (foils extended), 26 (withdrawn) 2 G.E. gas turbines, H.P.: 30,000; 2 diesels, H.P.: 1,200 20 (6 officers, 14 men)

Experimental Hydrofoil, Aluminium, There retractable foils, 25 ft. in height, each Experimental Hydrofoil, Aluminium. There retractable foils, 25 ft. In height, each weighing 7 tons, fitted port and starboard and on stern, and used in waves up to 15 feet, Initial maximum speed of about 50 knots, with later modifications expected to raise the speed to 80 knots. The two 15,000 H.P. gas turbines are Lockheed F-104 J-79 jet aircraft engines modified for marine use. Power plant and transmission designed to permit future investigation of various types of foils. Built by Lockheed Shipbuilding & Construction Co., Seattle, Washington, for \$11,795,000. Laid down on 8 May 1964, launched on 28 June 1965, and commissioned on 6 Aug. 1966.



PLAINVIEW

LST 1186 LST 1187

DOCK LANDING SHIPS (LSD)

4 + I New Construction

LSD 36 LSD 37 LSD 38 Displacement: Dimensions: Guns: 13,650 tons full load 555 × 84 feet 8—3 inch, 50 csl. (4 twin)

General

LSD 36, 1965 Programme, being built by Ingalls S.B. Corpn., LSD 37, 38, 39, 1966 Programme, by General Dynamics Corpn., LSD 40, 1967 Programme.

8 "Thomaston" Class

LSD 32 SPIEGEL GROVE (10 Nov. 1955) 33 ALAMO (20 Jan. 1956) 34 HERMITAGE (12 June 1956) 35 MONTICELLO (10 Aug. 1956) LSD 28 THOMASTON (9 Feb. 1954) 29 PLYMOUTH ROCK (7 May 1954) 30 FORT SNELLING (16 July 1954) 31 POINT DEFIANCE (28 Sep. 1954) Displacement:

6.880 tons light (11,270 tons full load) Alamo, Hermitage, Monticello, Spiegel Grove: 12,150 tons full load) 510 (o.a.)×84×19 (max.) feet 12—3 inch, 50 cal. (See Gunnery) Steam turbines. 2 shafts. S.H.P.: 23,000=24 kts. Dimensions:

Guns: Machinery: Boilers:

Complement; 305 plus 100 marines

General 2003 pius 100 marines

Larger and faster than earlier types. Built by Ingall's Shipbuilding Corp. Fitted with helicopter landing platforms, and two 50 ton cranes, 21 LCM (6) or 3 LCU and 6 LCM, and 3 to 8 helicopters can be carried Launch dates above.

Gunnery

twin 3 inch, 50 cal. mountings were removed in 1962.

Photographs
A photograph of Thomaston appears in the 1955-56 to 1959-60 editions, and of Monticello in the 1960-61 to 1963-64 editions.



HERMITAGE (helicopter aboard)

1964. A. & I. Pavia

13 " Cabildo " Class

LSD
16 CABILDO (28 Dec. 1944)
13 CASA GRANDE (ex-Spear, exway, 11 Apr. 1
17 CATAMOUNT (27 Jan. 1945)
18 COLONIAL (28 Feb. 1945)
19 COMSTOCK (28 Apr. 1945)
20 DONNER (6 Apr. 1945)
21 FORT MANDAN (1945)
Disnlacement: 4,790 LSD

4,790 tors standard (9,375 tons full load)
475\(\frac{1}{4}\) (o.a.)\times 76\(\frac{1}{4}\) × 18 (max.) feet
12—40 mm, AA
Geared turbines. 2 shafts. S.H.P.: 7,000=15.4 kts.
2, two-drum single pass
265 (15 officers, 250 men) Dimensions: Guns: Machinery: Boilers:

Complement:

Built by Newport News (13, 14, 15, 16, 17, 18, 19). Bostor Navy Yard (20, 21, 26, 27). Gulf S.B. Corp. (22) and Philadelphia Navy Yard (25). Similar to "Ashland" class. Can carry 3 LCUs or 18 LCMs. In this class the 5-inch gun and all 20 mm. guns have been removed. All ships are fitted with helicopter platforms. (Fort Snelling, LSD 23, 15 now the cargo ship Taurus, T-AK 273, see later page.) Catamount, LSD 17, Colonial, LSD 18, Donner, LSD 20, Fort Mandan, LSD 21, and Fort Marion, LSD 22, were modernised under the FRAM Mark II Program in 1960-62. Donner, LSD 20, and Shadwell, LSD 15, are fitted as amphibious assault carriers for marine helicopter operations.

Photographs
A photograph of Rushmore appears in the 1952-53 to 1959-60 editions, and of Catamount and Fort Mandon in the 1947-48 to 1951-52 editions.



DONNER (helicopter aft.)

1965, Dr. Georgio Arra

7 "Ashland" Class

LSD LSD LSD S GUNSTON HALL (1 May 1943) 5 GUNSTON HALL (1 May 1943) 6 LINDENWALD (11 June 1943) 7 OAK HILL (25 June 1943) MCS 7 (ex-LSD 4) EPPING FOREST (2 Apr. 1943)

4,790 tons standard (8,700 tons limit) Guston Hall, Lindenwald, 5,380 tons standard, 9,200 tons full Displacement:

Lindenword, 5,380 tons standard, 9,200 tons full load) 454 (w.l.), $475\frac{1}{8}$ (o.a.) \times 72 \times 18 feet 12—40 mm. AA. Skinner Unaflow, 2 shafts, I.H.P.: 7,400=13 kts. 2, of 2-drum type 15 officers, 250 men (total accommodation 326) Dimensions: Guns: Machinery:

Complement:

General All built by Moore Dry Dock Co. Designed to serve as parent ships for landing and coastal craft. Gunston Hall and Lindenwald were adapted to Arctic service in 1949. The 5-inch gun and all 20 mm, guns were removed. All carry 18 flat nosed LCMs (Landing Craft Medium) or 3 LCUs in their well-deck running three-quarters of their jength. Length of well in open 252 feet, width of well 44 feet. In each LCM a smaller LCVP (Landing Craft, Vehicle-Personnel) can be carried. All fitted with a helicopter landing platform over the well-deck. Epping Forest, employed as a minecraft tender in the Far East, was reclassified as MCS 7 on 30 Nov. 1962.

Oak Hill, LSD 7, was modernised under the FRAM Mark II Programme in 1960 and Belle Grove, LSD 2, in 1961. General

Dock Landing Ships-contd.

Transfer
White Marsh, LSD 8, was transferred to Taiwan, China on 17 Nov. 1960.



OAKHILL

LSD 39

, 1965, United States Navy Official

TANK LANDING SHIPS (LST)

9 + 11 New Construction

LST 1179 LST 1180 LST 1181 LST 1182 LST 1183

Displacement: Dimensions: Guns: Machinery:

8,342 tons full load (revised figures)
518×68 feet
4—3 inch, 50 cal. (2 twin)
Diesels designed for a sustained speed of 20 kts.
231 (14 officers, 217 men). Accommodation for 430 troops Complement:

General
LST 1179, 1965 Programme, and LST 1180, 1181, 1966 Programme, being built by Philadelphia Naval Shipyard. LST 1182 to 1187 also 1966 Programme, Eleven more in 1967 Programme. Prototype of a new class, which does not have bow doors. Bow ramp for unloading onto a pontoon causeway to the beach. Stern ramp for loading and unloading amphibious vehicles in deep water.

7 "Suffolk County" Class

LST
1171 DE SOTO COUNTY (28 Feb. 1957) 1175 YORK COUNTY (5 Mar. 1957)
1173 SUFFOLK COUNTY (5 Sep. 1956) 1176 GRAHAM COUNTY (19 Sep. 1957)
1174 GRANT COUNTY (12 Oct. 1956) 1177 LORAIN COUNTY (22 June 1957)
1178 WOOD COUNTY (14 Dec. 1957)

Displacement: Dimensions: Guns: Machinery:

4,164 tons light (8,000 tons full load)
442 (o.a.) ×62×164 feet
6—3 inch, 50 cal. (3 twin)
Diesel (Graham County 4 Nordberg, 2 per shaft, others
6, 3, per shaft). H.P.: 14,400=16 kts.
184 (10 officers, 174 men)

Complement:

General
Greater speed, size and troop capacity than previous LSTs Suffolk County was built by Boston Navy Yard, Lorain County and Wood County by American Shipbuilding Co. Lorrain, Ohio, De Soto County and Grant County by Avondale Marine Ways, New Orleans, Louisiana, York County and Graham County by Newport News Shipbuilding & Dry Dock Co., Virginia. Contract for LST 1172 not awarded. Suffolk County commissioned on 15 Aug. 1957, De Soto County on 10 June 1958, Graham County on 14 Apr. 1958, Lorain County on 30 Aug. 1958, Wood County on 5 Aug. 1959. Air-conditioned. Controllable pitch propellers. Launch dates above.

Photographs
A photograph of Suffolk County appears in the 1959-60 editions, and of York County in the 1960-61 to 1944-55 editions.



DE SOTO COUNTY 1965, direct from Commanding Officer, U.S.S. De Soto County

15 "LST 1156-1170" Series

1156 TERREBONNE PARISH 1156 TERREBL COUNTY
1157 TERRELL COUNTY
1158 TIOGA COUNTY
1159 TOM GREEN COUNTY
1160 TRAVERSE COUNTY
1161 VERNON COUNTY
1162 WAHKIAKUM COUNTY

1163 WALDO COUNTY 1163 WALDO COUNTY
1164 WALWORTH COUNTY
1165 WASHOE COUNTY
1166 WASHTENAW COUNTY
1167 WESTCHESTER COUNTY
1168 WEXFORD COUNTY
1169 WHITFIELD COUNTY
1170 WINDHAM COUNTY

Displacement: Dimensions: Guns: Machinery:

2.590 tons light (5,800 tons full load)
384 (o.a.) × 55 × 17 feet
6—3 inch, 50 cal. (3 twin)
4 G.M. diesels. 2 shafts. Controllable pitch propellers.
B.H.P.: 6,000=15 kts.

Complement:

General
Design is modification of that of two experimental ships constructed during the Second World War. LST 1156 was launched on 9 Aug. 1952, 1158 on 11 Apr. 1953, 1163 on 17 Mar. 1953, 1156-1160 were built by Bath Iron Works, 1166-1170 by Christy Corporation, and 1161-1165 by Ingalls' Shipbuilding Corporation.

A photographs

A photographs

rocographs

A photograph of Tioga County appears in the 1954-55 to 1959-60 editions, and

Waldo County in the 1960-61 to 1964-65 editions,



TOM GREEN COUNTY

1965. United States Navy, Official

Tank Landing Ships (LST)—contd. 2 Steam Type

1ST 1153 TALBOT COUNTY

AVB 2 TALLAHATCHIE COUNTY
(ex-LST 1154)

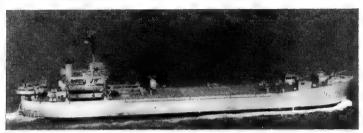
2.324 tons (6,000 tons full load) (ex-LST 11 368 (w.l.), 382 (o.a.)×54×17 feet 2—5 inch. 38 cal., 4—40 mm. AA. Geared tubines. 2 shafts, S.H.P.; 6,000=14 kts. Displacement: Dimensions: Guns: Machinery:

Complement: General

Built by Boston Navy Yard. Talbot County was launched on 24 Apr. 1947 and completed on 3 Sep. 1947; Tallahatchie County was launched on 19 July 1946 and completed on 9 June 1949. They are the only steam powered LSTs. This type can carry 4 small landing craft and has increased troop accommodation, greater tank vehicle and cargo capacity and improved arrangements for discharge, compared with the "LST 1-1152" class. Conversion

Conversion

Tallabatchie County was converted to an advance aviation base ship, AVB, at the Naval Shipyard, Charleston, S.C., in the Fiscal Year 1960 conversion programme, and recommissioned on 20 Jan. 1962, Conversion completed on 13 Mar. 1962, Fitted with new all aluminium superstructure, maintenance shops, communications, weather forecasting, briefing rooms and a portable tower for aircraft control. Accommodation for 270 man aircraft squadron in addition to crew of 15 officers and 200 men.



TALBOT COUNTY (steam type)

1960, United States Navy, Official

71 LCT ELL LIED Comico

	/ LS 5 - 52	Seri	es
LST		LST	
515	CADDO PARISH	854	KEMPER COUNTY
525	CAROLINE COUNTY	901	LITCHEFIELD COUNTY
	CHASE COUNTY	902	LUZERNE COUNTY
533	CHEBOYGAN COUNTY		MADERA COUNTY
	CHESTERFIELD COUNTY	912	MAHNOMEN COUNTY
583	CHURCHILL COUNTY	980	MEEKER COUNTY
601	CLARKE COUNTY	983	MIDDLESEX COUNTY
602	CLEARWATER COUNTY (USAF)	1032	MONMOUTH COUNTY
603	COCONINO COUNTY	1066	NEW LONDON COUNTY
692	DAVIESS COUNTY		NYE COUNTY
722	DODGE COUNTY	1069	ORLEANS PARISH
758	DUVAL COUNTY	1073	OUTAGAMIE COUNTY
762			PAGE COUNTY
786			PARK COUNTY
819			PITKIN COUNTY
821	HARNETT COUNTY	1084	POLK COUNTY
822	HARRIS COUNTY (MSTS)	1088	PULASKI COUNTY
824	HENRY COUNTY	1096	ST. CLAIR COUNTY
825			SAN JOAQUIN COUNTY
836			SEDGWICK COUNTY
838			SNOHOMISH COUNTY
839			STONE COUNTY
846			SUMMIT COUNTY
848	JEROME COUNTY		SUMNER COUNTY
		1150	SUTTER COUNTY

11.653 tons standard, 2.366 beaching, (4,080 full load)
316 (w.l.), 328 (o.a.)×50×14 feet
7—40 mm. AA., 2—20 mm. AA.
G.M. diesels. 2 shafts. B.H.P.: 1,700=11-6 kts.
119 (accommodation for 266) Displacement: Dimensions: Guns: Machinery:

Complement: General

General
All LSTs listed above and on previous page which previous carried numbers only, were named on 1 July 1955. Cargo capacity 2,100 tons.
All reserve LSTs (17 ships) were recommissioned in 1965-66, Daviess County, stricken in June 1964, and LST 664, stricken in 1961, were reacquired from the Martime Administration in 1965 and manned by Koreans. De Kalb County and Plumus County are Japanese manned, and consequently have had their names rescinded, being now designated T-LST 715 and T-LST 1083, respectively. Unnamed Ships
Following LSTs assigned to MSTS: 15 Japanese-manned, LSTs 530, 546, 550, 566.
572, 579, 581, 587, 600, 607, 613, 623, 629 630, 649, 715, 1083. Four others:
LSTs 590, 626, 643, 664 are Korean-manned. LST 1072, (unnamed) is on loan to the U.S. Air Force.
Photographs

Photographs
A photograph of St. Clair County appears in the 1958-59 and 1959-60 editions, of Sublette County in the 1954-55 to 1957-58 editions, and of St. Clair County in the 1960-61 to 1963-64 editions.

Modernisation
Holmes County, LST 836, Polk County, LST 1084, Stone County, LST 1141, and
Summer County, LST 1148, were modernised in the 1960 FRAM Mark II programme.
Mahnomen County, LST 912, was fitted in 1966 with a new test bow configuration designed for the new 20-knot LSTs which will have bow ramp instead of bow doors. Harris County, LST 822, was fitted in 1966 with king-post and helicopter platform forward.



1961, United States Navy, Official

Tank Landing Ships-contd.



TALLAHATCHIE COUNTY (see Col. I)

1965 A. & I. Pavin

Reclassification

Recuessification
Orleans Parish was reclassified from LST 1069 to MSC 6 on 19 Jan. 1959, but
was redesignated T-LST 1069 on 1 June 1966.

was redesignated 1-LST 1007 of T Julie 1786.

Transfers

LST 1010 was transferred to Korea on 22 Mar. 1955. LST 840 Iron County, LST 859 Lafayette County, LST 1110 San Bernardino County, LST 1091 Sagadahoe County and LST 1152 Sweetwater County to Nationalist China in 1958 LST 849 Johnson County, LST 853 Kane County, LST 900 Lynn County and LST 1080 Pender County to Korea in 1958, LST 512 Burnest County to Peru in 1958. Solana County, LST 1845 to Indonesia in 1960, Hamilton County, LST 802, to Japan in 1960, Potter County, LST 1086, to Greece in 1960, LST 849 to Korea, LST 520, LST 535, LST 578 and LST 735 to Taiwan, Greer County, LST 799, Rice County, LST 1097, and Saline County, LST 1011 to West Germany in 1961, Lawrence County, LST 887 and Russell County, LST 1090 to Indonesia, Doggett County, LST 689, Hillsdale County, LST 835, and Nansemond County, LST 1064 to Japan in 1961, Sublette County, LST 1144, to Taiwan China in Jan. 1961, Mildrad County, LST 689, and Montgomery County, LST 1041 to West Germany in 1961, LST 616, LST 652 and LST 657 to Indonesia in 1961, Lincoln County, LST 898 to Thalland in 1962, Marricopa County, LST 938 and Marion County, LST 975 to Vietnam in 1962, and Cayuga County, LST 529, in 1963, Stark County, LST 1134, to Thailand on 16 May 1966.

Disposals

LST 529, in 1963, Stark County, LST 1134, to Thailand on 16 May 1966.

Disposals

LST 983 Mineral County was destroyed as a target for guntire, LST 772 Ford County, LST 855 Kent County, and LST 1068 Orange County were disposed of in 1957, LST 527 Cassia County, LST 803 Hampden County and LST 827 Hillsborough County in 1958, LST 561 Chittenden County after grounding at Kauai, T.H., in Mar. 1958, (salvaged after stranding, but torpedoed by the submarine Sargo off Oahu in Nov. 1958) Lyman County, LST 903, and Lyon County, LST 904, were sunk as targets in 1959, Calaveras County, LST 516, Crook County, LST 611, Eddy County, LST 759, Esmeralda County, LST 516, Crook County, LST 611, Eddy County, LST 794 were stricken in 1959, Cape May County, LST 784, Gibson County, LST 731, Juniata County, LST 542, Curry County, LST 521, Catahouia Parrish, LST 528, Chelan County, LST 850, Lake County, LST 885, Douglas County, LST 731, Juniata County, LST 850, Lake County, LST 880, Lamoure County, LST 883, Lee County, LST 888, Mahoning County, LST 914. Marinette County, LST 1074, Payette County, LST 1048, Ouachita County, LST 1071 Overton County, LST 1074, Payette County, LST 1079, Pima County, LST 1081, Somervell County, LST 1074, Payette County, LST 1142, between 1 June and 30 June 1960, King County, AG 157 (ex-LST 857) and LST 618 in 1960, Jefferson County, LST 845, Steuben County, LST 1138, and Dunn County, LST 742, were stricken in 1961, Calhoun County, LST 519, in Nov. 1962.

14 LST 1-510 Series

LST 344 BLANCO COUNTY

LST 509 BULLOCH COUNTY

1,625 tons light, 2,366 tons beaching (4,050 tons full Displacement:

1,025 tolis light, 2,366 tolis beatining (4,036 tolis)
10ad)
328 (o.a.)×50×14½ (max.) feet
7—40 mm. AA.. 2—20 mm. AA.
G,M. diesels. 2 shafts. B.H.P.: 1,700=10·8 kts.
80 to 119 (plus 147 troops) Dimensions: Guns: Machinery: Complement:

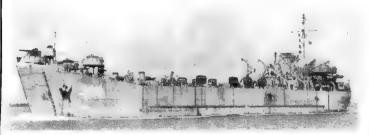
General

These ships are ocean tank carriers with bow doors. In the Second World War
LST 32 was fitted with railway lines on the tank deck to enable her to transport
trucks from Sicily to the mainland, She was converted to Naval Air Force Atlantic.
Flagship in 1953, Fitted for advanced base air support, she carried 2 LCM on deck,
Blanco County and Bulloch County recommissioned in 1965. LST 287, stricken in
Sep. 1962, was reaquired from the Maritime Administration in 1965 and designated USNS.

Unnamed Ships
Following assigned to MSTS and unarmed: 11 Japanese manned, LSTs 47, 117, 176, 222, 230, 276, 277, 399, 456, 488, 491. LST 287 is Korean manned.

Transfers
LST 53 was transferred to Korea, LST 227 Berkeley County and LST 400 Bradley
County to Taiwan China, LST 503 to Taiwan on 29 Apr. 1955, LST 218 and LST
227 to Korea in 1955 and LST 288 Berkshire County on 5 Mar. 1956, LST 503
to Taiwan, Boone County, LST 389, and Bowman County, LST 391, to Greece in
1960, Alameda County reclassified from LST 32 to AVB 1 (Advance Aviation Base
Ship) to Italy in Nov. 1962, LST 325 to Greece on 29 May 1964.

Disposals LST 291 Disposals
LST 291 was stricken after grounding in 1954. LST 31 Addison County, LST 57
Armstrong County, LST 482 Branch County, LST 483 Brewster County and LST 504
Buchanan County were stricken on 11 Aug. 1955 and used as targets. Atchison
County, LST 60. Bamberg County, LST 209, Benton County, LST 263, Benzie
County, LST 266, Bernalilo County, LST 306. Bledsoe County, LST 356, and
Buncombe County, LST 510, on 1 June 1959 and 30 June 1960.



BLANCO COUNTY

1964, courtesy "Our Navy"

ATTACK TRANSPORTS (APA)

2 "Paul Revere" Class

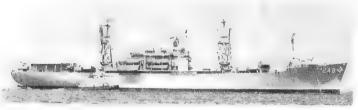
APA 249 FRANCIS MARION (ex-SS Prairie Mariner)
APA 248 PAUL REVERE (ex-SS Diamond Mariner)

Displacement: Measurement: Dimensions:

(ex-SS Diamond Mariner)
10,709 tons light (18,000 tons full load)
16,838 tons gross
528 (pp.), 563\frac{1}{2} (o.a.)\times 76\times 24\frac{1}{2} feet
4—3 inch, 50 cal. in two twin mountings
G.E. geared turbines. 1 shaft. S.H.P.: 19,250=20 kts.
414 (35 officers, 379 men) Guns: Machinery:

Complement: General

General Paul Revere is a C4-S-I type cargo vessel converted into an Attack Transport by Todd Shipyard Corp., San Pedro, Calif., under the 1957 Fiscal Year Conversion Programme. Contract was awarded in Aug. 1956. Commissioned on 3 Sep. 1958 and completed on 29 Sep. 1958. She has accommodation for a 1,500 strong Marine Battalion, a helicopter platform on the stern for troop helicopters, and is fitted as an Amphibious Command Flagship. Francis Marlon was a similar "Mariner" type hull converted into an APA by Bethlehem Steel, Key Highway Yard, Baltimore, Md., under the Fiscal Year 1959 Programme (conversion started on 13 Apr. 1959 and the ship was commissioned on 6 July 1961). Both ships were originally built by New York Shipbuilding Corporation, Camden, Francis Marlon in 1954 and Paul Revere in 1953. Revere in 1953.



PAUL REVERE

Added 1965, United States Navy, Official



FRANCIS MARION

1962, United States Navy, Official

13 "Haskell" Class

APA 237 BEXAR 195 LENAWEE 199 MAGOFFIN 212 MONTROSE

APA 213 MOUNTRAIL 215 NAVARRO 220 OKANOGAN 222 PICKAWAY

APA
227 RENVILLE
228 ROCKBRIDGE
194 SANDOVAL
208 TALLADEGA
210 TELFAIR

6,720 tons light, (12,450 tons full load)
436\(\frac{1}{2}\) (w.i.), 455 (o.a.) \(\times 62 \times 24 \) feet
12—40 mm. AA. (ase Gunnery)
Geared turbines, S.H.P.: 8,500=17.7 kts.
2 Babcock & Wilcox
536

Displacement: Dimensions: Guns: Machinery: Boilers: Complement:

General VC 2-S-AP 5 "Victory" type, VC 2-5-AP 5 "Victory" type, all launched in 1944-45. All have County names. Can carry 1,560 troops and 3,000 tons of war stores. Mountrail, 213, Sandoval, 194, and Telfair, 210, were reacquired from the Maritime Administration in 1961, re-instated on the Navy List and recommissioned. Renville and Telladega are now to remain in commission.

Gunnery
The 5-inch gun was removed. Scheduled to be replaced by a twin 3-inch, 50 cal.

Photographs
A photograph of Picaway appears in the 1953-54 to 1958-59 editions, of Olmster in the 1959-60 edition and of Okanogan in the 1960-61 to 1964-65 editions.

1959-60 edition and of Okanogan in the 1960-61 to 1964-65 editions. Transfer Noble, APA 218, was decommissioned on I July 1964 and transferred to Spain. Disposals

Arenac, 128. Barnwell, 132, Bronx, 236. Brookings, 140, Clinton, 144. Crockett, 148. Dane, 238. Edgecombe, 164. Gage, 168. Grimes, 172. Kershaw, 176. Lavaca, 180. Lubbock, 197. McCracken, 198. Menifee, 202, Meriweather, 203, Mifflin, 207. Missoula, 211. Natrona, 214. Nesheba, 216. New Kent, 217. Okalosa, 219. Oneida, 221. Rawlins, 226. Rockingham, 229. Rutland, 192. San Saba, 232. Sherburne, 205. Sibley, 206, and Tacewell, 209 (30 attack transports, APA), were stricken from the Navy List and transferred to the Maritime Administration Reserve Fleet in 1959. Deuel, 160, Logan, 196. Rockwall, 230, were transferred to Maritime Administration in 1960. Deuel and Rockwall were stricken on 1 Dec. 1958. Glynn, 239, Latimer, 152. Mellette, 201. Olmstead, 188, Randall, 224, Sanborn, 193. Sarasoto, 204, were disposed of in 1961, and Botetourt, 136. Bottinean, 235, Menard, 201. were stricken from the Navy List and transferred to the Maritime Administration Reserve Fleet in 1961.



ROCKBRIDGE

1965, Dr. Giorgio Arra

Attack Transports-contd.

"6 Bayfield" Class

APA
33 BAYFIELD (ex-Sea Bass)
36 CAMBRIA (ex-Sea Swallow)
37 CAVALIER (15 Mar. 1943)

APA 38 CHILTON (ex-Sea Needle, 24 Dec. 1942) 44 FREMONT (ex-Sea Corsair, 31 Mar. 1943) 45 HENRICO (ex-Sea Darter, 31 Mar. 1943)

8,100 tons light (16,100 tons full load) 465 (w.l.), 492 (o.a.) \times 69 \pm 26 \pm 7eet 2—5 inch, 4—40 mm. AA. Geared turbines. S.H.P.: 8,500=18-4 kts. 2 Combustion Engineering type 250 (554 total accommodation)

Displacement:
Dimensions:
Guns:
Machinery:
Boilers:
Complement: General C3-5-A2 type, formerly with "Sea" names; but subsequently given County names by the United States Navy.

Photographs
A starboard broadside surface view of Chilton appears in the 1952-53 to 1959-60 editions and a port broadside aerial view of Henrico in the 1960-61 to 1963-64 editions.



CAMBRIA

1964, Captain Aldo Fraccaroli

2 "Delta" Class

APA 32 CALVERT (ex-Deloreans, 29 May 1943)

APA 31 MONROVIA (ex-Delargentino, 1942)

8,429 tons light (14,247 tons full load) 468 (pp.), 491 (o.a.) \times 65 $\frac{1}{2}$ \times 25 $\frac{1}{2}$ feet 1—5 inch, 3—3 inch, 4—40 mm. AA. Geared turbines. S.H.P.: 7,800=16 kts. 2 Babcock & Wilcox 555 (total accommodation) Displacement: Dimensions: Guns: Machinery: Boilers: Complement:

General
C 3 Delta type, formerly with "Del" names. Can carry 1,455 troops. Built by Bethlehem, Photographs

A port quarter oblique aerial view of Calvert appears in the 1957-58 to 1962-63 editions. Disposals Disposals
Charles Carroll, APA 28, and Crescent City, APA 21, were stricken from the Navy List in 1959, and transferred to the Maritime Administration Reserve Fleet.



MONROVIA

1963, Giorgio Ghiglione

I "American" Class

APA 27 GEORGE CLYMER (ex-African Planet, ex-American Former)

Displacement: Dimensions: Guns: Machinery: Complement: | 10,812 tons light (18,000 tons full load) | 465 (w.l.), 489 (o.a.) \times 69 $\frac{3}{4}$ \times 27 $\frac{1}{3}$ feet 4—3 inch, 6—40 mm. AA. Geared turbines. S.H.P.: 8,500=18·4 kts. 512

General
C-3P type. Can carry 27 landing craft and 1,400 troops. Fitted as a flagship. Launched in 1941.

in 1941.
Disposals
Arthur Middleton, APA 25, and Samuel Chase, APA 26, of the "American" class, and President Adams, APA 19, President Hayes, APA 20, President Jackson, APA 18, and Thomas Jefferson (ex-President Garfield), APA 30 (of the "President" class), were stricken from the Navy List in 1959 and transferred to the Maritime Administration Reserve Fleet.



GEORGE CLYMER

United States Navy, Official

ATTACK CARGO SHIPS (AKA)

4 + I New Construction

AKA HK

AKA 113

Displacement:
Dimensions:
Guns; AKA 114 20,700 tons full load 580×82 feet 8—3 inch (4 twin) General

General

Four authorised in the Fiscal Year 1965 Programme. Equipped with helicopter platform. To be built by Newport News Shipbuilding & Dry Dock Co. To cost \$28,000,000 each. Wheelhouse fitted with engine controls. Automated engine room with 3-man watch. Another AKA is in the 1966 Programme.

I "Tulare" Class

AKA 112 TULARE (ex-Evergreen Mariner)

12,000 tons light (17,988 tons full load)
9,200 tons gross, 13,400 tons deadweight
528½ (pp.), 564 (o.a.)×76×24½ (28 max.) feet
12—3 inch, 50 cal. in six twin mountings
Turbine. I shaft. S.H.P.: 22,000=20 kts. Displacement: Measurement: Dimensions: Guns: Machinery 38 officers, 399 men

Built by Bethlehem, San Francisco, Laid down on 16 Feb. 1953, launched on 22 Dec, 1953; Acquired by Navy during construction. Commissioned on 13 Jan. 1956. C4-S-1 B type. Has helicopter landing platform and booms capable of lifting 60-ton landing craft Carries 9 LCM-6 landing craft. Can carry 575 troops and crew, 27 landing craft and 300 vehicles.



TULARE

1960, United States Navy, Official

12 "Andromeda" Class

ARA

100 OGLETHORPE (15 Apr. 1945)
19 THUBAN (26 Apr. 1943)
fire) 88 UYALDE (ex-Wild Pigeon) (20 May 1944)
1944) 94 WINSTON (30 Nov. 1944)
) 92 WYANDOT (28 June 1944) USNS
44) 93 YANCEY (8 July 1944)
7,430 tons light (12,800 tons full load)
435 (w.l.) 459½ (o.a.)×63×24 (max.) feet
8—40 mm, AA. (see General)
Geared turbines. S.H.P.; 6,000=16·4 kts.
2 Foster-Wheeler AKA
54 ALGOL (ex-James Baines)
56 ARNEB (ex-Mischief)
57 CAPRICORNUS (ex-Spitfire)
96 MATTHEWS (22 Dec. 1944)
97 MERRICK (28 Jan. 1945)
61 MULIPHEN (26 Aug. 1944)
Displayment: 7.4 Displacement; Dimensions;

Guns: Machinery: Boilers: Complement: 2 Foster-Wheeler 247

General

C2-S-B1 type. Launch dates above. Can carry over 5,200 tons of cargo and 2,200 tons of tanks, Arneb completed refit for Arctic service on 15 Mar. 1949. Wyandot was also "winterised" with double hull plating. Matthews and Merrick were reacquired from the Maritime Administration Reserve Fleet by the Navy in 1951, and reactivated. Algol, 54, Ulvade, 88, Winston, 94, Wyandot, 92, Yancey, 93, were reacquired, reinstated on the Navy List, and recommissioned in 1961. Wyandot was assigned to MSTS in 1963, designated USNS, with a civil service crew, unarmed. The 5 inch gun has been removed from all active units of the "Andromeda" and "Rankin" classes and is scheduled to be replaced by a twin 3 inch mounting. Photographs Photographs

Larger photographs of Arneb and Matthews appear in the 1957-58 edition and of Wyandot in the 1958-59 to 1959-60 editions.

Transfers

Whitley, AKA 91, was transferred to Italy in 1962, and Achernar, AKA 53, to Spain on 2 Feb. 1965.
Disposals

Disposals
Alshain, 55, Andromeda, 15, Chara, 58, Leo 60, Marquette, 95, Montague, 98, Rolette, 99, were disposed of in 1961. Diphda, 59, Virgo, 20, Warrick, 89, and Whiteside, 90, were stricken from the Navy List and transferred to the Martime Administration Reserve Fleet in 1961 but Chara and Virgo were reacquired in 1965 and reclassified as ammunition ships AE 30 and AE 31, see later page



CAPRICORNUS

ALGOL

1965, A. & J. Parvia



1960, United States Navy, Official

Attack Cargo Ships-contd. 6 "Rankin" Class

AKA 103 RANKIN (22 Dec: 1944) 104 SEMINOLE (28 Dec. 1944) 105 SKAGIT (28 Nov. 1944)

Displacement: Dimensions:

AKA 106 UNION (23 Nov. 1944) 107 VERMILION (12 Dec. 1944) 108 WASHBURN (12 Dec. 1944)

6.456 tons light (14,160 tons full load)
459\(\frac{1}{2}\) (o.a.) \times 63 \times 26\(\frac{1}{2}\) feet
8-40 mm. AA., 10-20 mm. AA.
Geared turbines I shaft. S.H.P.: 6,000=16.5 kts.
247

Guns: Machinery: Complement: General
C2-5-AJ3 type. Laid down in 1944 and commissioned in 1945. Combat load 4,500 tons.
The 5-inch gun is scheduled to be replaced by a twin 3-inch mounting.



SKAGIT

1960, United States Navy, Official

Disposals of other classes
Of the "Libra" class, Libra AKA 12, and Oberon, AKA 14, were disposed of in 1961. and Titania, AKA 13, was stricken from the Navy List and transferred to the Martime Administration Reserve Fleet in 1961.
Of the "Bellatrix" class, Bellatrix, AKA 3, was disposed of in 1961, but reacquired and transferred to Peru in 1963; and Electra, AKA 4, was stricken from the Navy List and transferred to the Martime Administration Reserve Fleet in 1961.

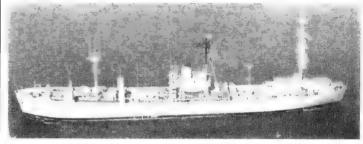
TECHNICAL RESEARCH SHIPS

3 "Liberty" Conversion

AGTR 1 (ex-AG 159) OXFORD (ex-Samuel R. Aitken, MCE 3127; AGTR 2 (ex-AG 165) GEORGETOWN (ex-S.S. Robert W. Hart) AGTR 3 (ex-AG 166) JAMESTOWN (ex-S.S. J. Howland Gardner)

7,330 tons 441½ (o.g.)×57×23 feet Triple expansion, I.H.P.: 2,500=12·5 kts. 275 (18 officers, 257 men) Measurement: Dimensions: Machinery: Complement:

General
Modified "Liberty" ships. Oxford began conversion in Sep. 1960 by New York Naval
Shipyard and commissioned on 8 July 1961. For research and experiments in communications and electromagnetic radiations. Unarmed. Georgetown and Jamestown, built by
New England Shipbuilding Corp. in 1945, were converted by Newport News Shipbuilding
& Dry Dock Co. and commissioned on 9 Nov. 1963 and 13 Dec. 1963, respectively. All
reclassified as AGTR on 1 Apr. 1964.



OXFORD

1962, United States Navy, Official

2 "Victory" Conversion

AGTR 4 (ex-AG 167) BELMONT (ex-Iran Victory) AGTR 5 (ex-AG 168) LIBERTY (ex-Simmons Victory)

7,190 tons light (10,680 tons full load) 455 (o.a.)×62×24 feet Turbine. S.H.P.: 8,500=18 kts. Displacement: Dimensions:

Machinery: Complement:

General
Modified "Victory" ships. Conversion completed by Williamette Iron & Steel, Portland,
Ore., in Sep. and Dec., commissioned 2 Nov. and 30 Dec. 1964, respectively. Mobile bases
for research in communications and electromagnetic radiation.



LIBERTY

1966, courtesy J. A. P. Albornoz

SURVEYING SHIPS (AGS)

I New Construction. Fleet Type

AGS 27

Displacement: Dimensions: Guns:

4,200 tons full load 380 (o.a.) \times 54 \times 16 (max.) feet 4 \longrightarrow 50 cal M.G. Diesel 1 shaft. Speed=15 kts. 15,000 miles at 12 kts. 272 (19 officers, 245 men, 8 civilian technicians)

Radius:

Machinery:

General

Designed for complete military hydrographic and oceanographic surveys, as tender for coastal survey craft, helicopters, and Marine Corps survey teams, and for compiling and printing finished charts on the spot to meet Fleet and landing force requirements. In the Fiscal Year 1965 Programme, Equipped with helicopter platform. Capable of self-support on operations for extended periods.

Surveying Ships—contd.

2 New Construction Medium Type

T-AGS 26 SILAS BENT

T-AGS 27 KANE

Displacement: Measurement: Dimensions: Machinery:

1,935 tons standard (2,558 tons full load) 2,700 tons gross 261½ (pp.), 285 (o.a.) × 48 × 15 feet Diesel-electric. I shaft H.P.: 3,000 = 15 kts. 12,000 miles at 12 kts. 79 (12 officers, 29 men, 38 scientists)

Radius: Complement: General

General

Silas Bent, is the first of this type of survey ship built for the Navy. Designed and equipped for hydrographic surveys and to collect special oceanographic, acoustic and meteorological data. Planned as a follow ship to the AGOR type, but the oceanographic research spaces are adapted for hydrographic surveys. Built by the American Shipbuilding Co. Laid down on 2 Mar. 1964, launched 16 May 1964 for completion in July 1965. Kane was laid down on 19 Dec. 1964, launched on 20 Nov. 1965 and completed on 24 Sep. 1966 by Christy Corp. Single screw propulsion with bridge control, 350 H.P. retractable bow propulsion unit to maintain heading when dead in water. Auxiliary propulsion for quick operation while maintaining steerageway. Another AGS is in the 1966 Programme.

2 New Construction. Small Type

AGS 25 KELLAR

Displacement: Dimensions: Machinery: Complement:

1,200 tons standard (1,400 tons full load)
191½ (w.l.), 209 (a.a.)×39×15 feet
Diesel-electric, 1 shaft. S.H.P.; 1,200=15 kts.
41 (9 officers, 17 men, 15 scientists)

General
Kellar, prototype authorised in 1962, is the first new construction survey ship built for the U.S. Navy. Civilian manned and operated under the technical control of the Hydrographer. Laid down on 20 Nov. 1962 and launched on 30 July 1964. Before completion she broke loose from her berth and overturned during hurricane at New Orlean on 9 Sep. 1965 but later raised and repaired. AGS 31 was authorised in the 1965 programme. Single screw propulsion with bridge control. Rotatable bow propulsion unit to maintain heading of ship when dead in water.

9+2 Oceanographic Research Type

AGOR 3 ROBERT D. CONRAD AGOR 4 JAMES M. GILLISS AGOR 5 CHARLES H. DAVIS AGOR 6 SANDS

AGOR 7 LYNCH
AGOR 9 THOMAS G. THOMPSON
AGOR 10 THOMAS WASHINGTON
AGOR 12 DE STEIGUER
AGOR 13 BARTLETT

1,200 tons standard (1,380 tons full load)
191½ (w.l.), 209 (o.a.)×40×15 feet
Diesel-electric, 1 shaft. H.P.: 1,000=13½ kts.
8 officers, 16 men, 15 scientists (MSTS civilian crew) Displacement: Dimensions: Machinery: Complement:

General Complement: 8 officers, 16 men, 15 scientists (MSTS civilian crew) Robert D. Conrad was built by Gibbs Corporation, Jacksonville, Florida. Laid down on 19 Jan. 1961 and launched on 26 May 1962, James M. Gilliss and Charles H. Davis were built by Christy Corp., Sturgeon Bay, Wisconsin, Laid down on 31 May and 15 June 1961 and launched on 19 May and 30 June 1962, respectively. Sands and Lynch built by Marietta Mfg. Co., Point Pleasant, W. Va, laid down on 23 Aug. 1962 and 7 Sep. 1962, respectively, and launched on 14 Sep. 1963 and 17 Mar., 1964. Thomas G. Thompson and Thomas Washington were built by Marinette, Wisconsin. Laid down on 12 Sep. 1963 and launched on 18 July 1964 and 1 Aug. 1964 respectively. AGOR 12 and 13 in the Fiscal Year 1965 programme, and two more in the 1966 programme. All equipped to study sound transmission, effect of the ocean on scientific and naval instruments, and obtain information on installation and improving ocean surveillance systems. Designed for high manoeuvrability at low speeds. Fitted with laboratories and meteorological rocket launching gear. Bow propeller. 175 H.P.: bow propulsion unit. 1,300 tons gross measurement, Robert D. Conrad is on loan to Lamont Laboratory, Thomas G. Thompson to University of Washington, Thomas Washington to Scripps Inst. of Oceanography.



1964, United States Navy, Official

3 Ballistic Missile Support Type

T-AGS 21 BOWDITCH (ex-S.S. South Bend Victory) 22 DUTTON (ex-S.S. Tuskegee Victory) 23 MICHELSON (ex-S.S. Joliet Victory)

General "Victory" hulls converted in support of the Fleet Ballistic Missile Programme, Dutton and Michelson at Philadelphia Naval Shipyard 8 Nov. 1957 to 16 Nov. 1958 and 1 Mar. 1958 to 31 Dec. 1958, respectively, and Bowditch at Charleston Naval Shipyard 10 Oct. 1957 to 30 Sep. 1958. Operated by MSTS with civilian crew. Designed to chart the ocean floor and to record magnetic fields and gravity to enable vessels to establish locations within a few yards of their actual positions. A photograph of Dutton appears in the 1960-61 to 1963-64 editions, and of Michelson in the 1964-65 and 1965-66 editions.

I Oceanographic Research (Converted) Type

JOSIAH WILLARD GIBBS, T-AGOR I (ex-San Carlos, AVP 51)

1,750 tons standard (2,800 tons full load) 300 (w.l.), $310\frac{1}{4}$ (o.c.)× $41\frac{1}{4}$ × $13\frac{1}{2}$ feet 2 Fairbanks-Morse diesels. 2 shafts, S.H.P.: 6,080=18 Displacement: Dimensions: Machinery:

kts. 76 (48 crew, 28 scientists) Complement:

General

Former seaplane tender. Built by Lake Washington Shipyard, Houghton, Wash. Laid down on 7 Sep. 1942, launched on 20 Dec. 1942, and completed on 21 Mar. 1944. Assigned to Columbia University Hudson Laboratories by ONR in 1959, and operated by MSTS. Equipped with a 3rd auxiliary propeller for speeds of 4 kts. and less

A photograph, starboard bow view, appears in the 1959-60 to 1961-62 editions, and a starboard broadside view in the 1962-63 to 1965-66 editions.

Surveying Ships—contd.

2 Ex-Attack Cargo Ship Type

AGS 16 MAURY (ex-Renate, AK 36) AGS 15 TANNER (ex-Pamina, AK 34)

Displacement: Dimensions:

4,203 tons standard (6,500 tons full load)
400 (w.l.), 426 (o.a.)×58×17 feet
8—40 mm. AA.
Westinghouse turbo-electric. 2 shafts. B.H.P.: 6,000= Machinery:

Boilers: 2 Wickes

Former Attack Cargo Ships, S4-SE2-B1 type, Both built by Walsh-Kaiser Co. Inc., Providence, R.I. Launched on 31 Jan. and 5 Jan. 1945, respectively. Converted in 1946. Helicopter flight deck on stern.



MAURY

United States Navy, Official

2 Ex-Seaplane Tender Type

AGS 50 REHOBOTH (ex-AVP 50) AGS 30 SAN PABLO (ex-AVP 30)

1,766 tons standard (2,800 tons full load)
300 (w.l.), 310½ (o.a.)×41½×13½ feet
Fairbanks-Morse diesels, 2 shafts, B.H.P.; 6,080=18 kts, 169 (12 officers, 157 men) Displacement: Machinery: Complement:

General

Former Seaplane Tenders. Reclassified as AGS and assigned to duties as deep-sea hydrographic-surveying ships under the technical control of the Hydrographer. Built by Lake Washington Shipyard and Associated Shipbuilding, respectively. Launched on 8 Nov. and 31 Mar. 1942. Guns were removed in 1957.



SAN PABLO

1965, United States Navy, Official

2 Ex-Fleet Minesweeper Type

AGS 28 TOWHEE (ex-AM 388) AGS 19 SHELDRAKE (ex-AM 62)

890 tons standard (1,250 tons full load)
215 (w.l.), 221½ (o.a.)×32½×10½ feet
Diesel-electric. 2 shafts. B.H.P.: 3,118-3,532=18 kts. Displacement; Dimensions:

Machinery: Complement: 100

General Former Fleet Minesweepers. Built by Gen. Eng. & D.D. Co., Alameda, Calif. and American S.B. Co., Cleveland, Ohio respectively. Launched on 12 Feb. 1942 and 6 Jan. 1945. Reclassified as surveying vessels, Sheldrake early in 1952 and Towhee on 1 Apr. 1964. Sister ship Pursuit AGS 17 (ex-AM 108) disposed of in 1960, Prevail, AGS 20 (ex-AM 107) on 10 Jan. 1964 and Requisite, AGS 18 (ex-AM 109) on 1 Apr. 1964.



SHELDRAKE

1965, United States Navy, Official

I Coastal Type

LITTLEHALES AGSC 15 (ex-YF 854)

General

Former covered lighter launched in Aug. 1945, converted and reclassified as a coastal survey ship on 14 Feb. 1959 and renamed. Standard 300 tons (650 tons full load), 133 (o.a.)×31×9 feet, diesel reduction, 2 shafts, S.H.P.: 1,000, crew 11.

I Ex-Tug Type

SERRANO, AGS 24 (ex-ATF 112)

General
Former fleet ocean tug of the "Apache" class, launched in July 1943, reclassified from ATF to AGS on 15 June 1960. Standard 1,240 tons (1,640 tons full load), 205 (o.a.)×39×17 feet, diesel-electric, 1 shaft, S.H.P.: 3,000, crew 116.

REPAIR SHIPS (AR)

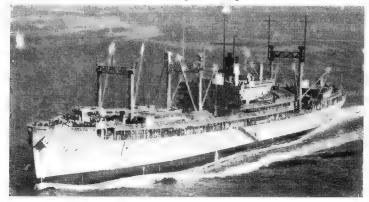
I "Arcadia" Class

AR 22 KLONDIKE ex-AD 22 (12 Aug.1944)

8,165 tons standard (16,635 tons full load) 465 (w.l.), 492 (o.a.) \times 69 $\frac{1}{2}\times$ 27 $\frac{1}{4}$ feet 1.—5 inch, 4.—3 inch, 4.—40 mm. AA. Geared turbines. S.H.P.: 8,500=18·4 kts. 2 Babcock & Wilcox Displacement: Dimensions: Guns: Machinery: Boilers:

Accommodation for 826 Complement: General

Sister ship of "Arcadia" class destroyer tenders (see previous page), reclassified as a repair ship on 20 Feb. 1960 and designation changed from AD 22 to AR 22.



KLONDIKE.

1962, United States Navy, Official

2 "Amphion" Class

AR 13 AMPHION (15 May 1945)

Displacement: Dimensions: Guns: Machinery:

AR 14 CADMUS (5 Aug. 1945)

7,826 tons standard (16,900 tons full load) 456 (w.l.), 492 (o.a.) \times 70 \times 27½ feet 2—5 inch, 8—40 mm, AA. Westinghouse turbines, S.H.P.: 8,500=17 kts. 2 Foster-Wheeler Accommodation for 921

Boilers: Complement:

General

Built by Tampa Shipbuilding Co. Launch dates above, C 3 cargo type. Deucalion and Mars, of this type were cancelled.



CADMUS

1966, A. & J. Pavia

" EC 2" Type

ARG 4 TUTUILA (ex-Arthur P. Gorman, 12 Sep. 1943)

5,766 tons standard (14,350 tons full load) 416 (w.l.), 441 $\frac{1}{2}$ (o.a.)×57×23 (mean) feet Triple expansion. I.H.P.: 2,500–12·5 kts. 2 Babcock & Wilcox Displacement: Dimensions: Machinery: Boilers:

General General
Liberty ship. Built by Bethlehem Steel Co., Fairfield Yard, Baltimore, Md. Internal
Combustion Engine Repair Ship, Hooper Island, ARG 17 was decommissioned in July
1959 and disposed of, Kermit Roosevelt was stricken on 1 Jan. 1960, and Luzon,
ARG 2, disposed of in 1960. Xanthus was stricken in 1962. Chourre, ARV 1, Dionysus, AR 21, Culebra Island, ARG 7. Laertes, AR 20, Mindanao, ARG 3, and Samar,
ARG 11, were stricken on 1 Sep. 1961. Cebu, ARG 6, Mona Island, ARG 9, and
Webster, ARV 2, were stricken and transferred to the Maritime Administration in
Sep. 1962. Oahn, ARG 5, and Palawan, ARG 10 were stricken in July 1963 and
transferred to the Maritime Administration reserve fleet.

4 "Vulcan" Class

AR 6 AJAX (22 Aug. 1942) AR 7 HECTOR (11 Nov. 1942)

AR 8 JASON (3 Apr.1943) AR 5 VULCAN (14 Dec. 1940)

Displacement: Dimensions: 9, 140 tons standard (16,200 tons full load) 520 (w.l.), 529\frac{1}{2} (o.a.)\times 73\frac{1}{2}\times 23\frac{1}{2} feet
4—5 inch, 8—40 mm. AA,
Geared turbines. 2 shafts, S.H.P.; 11,000=19.2 kts
4 Babcock & Wilcox 3-drum Guns: Machinery:

Boilers:

Complement: 950

General Vulcan was built by New York S.B: Corpm. under the 1959 Program and the other three by Los Angeles S.B. & D.D. Corpm., under the 1940 Program, All carry a most elaborate equipment of machine tools to undertake repairs of every description. Jason, formerly ARH 1, and rated as heavy hull repair ship, was reclassified AR 8 on 9 Sep. 1957.



AIAX

United States Navy, Official

Repair Ships—contd.

Built by Ingalls S.B. Co., Pascagoula, Mass. Launched on 21 Dec. 1940. Former destroyer tender, reclassified as a repair ship on 15 Apr. 1960 and designation changed from AD 21 to AR 23.



MARKAB (as repair ship)

1961, United States Navy, Official

AR 12 BRIAREUS (ex-Hawaiian Planter) AR 9 DELTA (ex-AK 29, ex-Hawaiian

8,975 tons standard (14,500 tons full load)
465\(\frac{1}{2}\) (pp.), 490\(\frac{1}{2}\) (o.a.)\(\times 69\(\frac{1}{2}\)\(\times 24\(\frac{1}{2}\)\) feet
1\(-5\) inch, 4\(-3\) inch, 4\(-40\) mm. AA.
Geared turbines. S.H.P.: 8,500\(-17\) kts.
2 Foster-Wheeler and 2 Babcock & Wilcox, respectively Displacement: Dimensions: Guns: Machinery: Boilers:

General

Both launched in 1941. C-3 type. Briareus is in reserve. Delta was recommissioned on 31 Oct. 1959.



DELTA

1961, United States Navy, Official

19 Ex-LST Type

ACHELOUS (ex-LST 10)
AMYCUS (ex-LST 489)
ASKARI (ex-LST 1131)
ATLAS (ex-LST 231)
BELLEROPHON (ex-LST 1132)
CHLORIS (ex-LST 1094)
EGGRIA (ex-LST 136)
ENDYMION (ex-LST 513)
FABIUS (ex-LST 1093) INDRA (ex-LST 1147)
KRISHNA (ex-LST 1149)
MEGARA (ex-LST 1095)
MIDAS (ex-LST 524)
PANDEMUS (ex-LST 650)
SARPEDON (ex-LST 956)
SATYR (ex-LST 852)
SPHINX (ex-LST 963)
TELAMON (ex-LST 957)
ZEUS (ex-LST 132) ARL 37 ARL 38 ARVA 5 ARL 18 ARB 7 ARL 23 ARL 24 ARB 8 ARB 4 ARL 1 ARL 2 ARL 30 7 ARL 7) ARL 31 ARVE 4 ARL 8 ARL 9 ARVA 5

1.625 tons light, 3.960 tons trials (4.100 tons ful load) 316 (w.l.), 328 (o.a.) \times 50 \times 11 feet 8—40 mm, AA, G.M. diesels. 2 shafts, B.H.P.: 1.800=11·6 kts Displacement:

Machinery: G.M. diesels. 2 shafts. B.H.P.: 1,800=11.6 kts
General
All launched in 1942-45. Four types: rated as Repair Ships for Battle Damage
(ARB) for Landing Craft (ARL), Aircraft Repair Ships for Aircraft Engines (ARVE),
and Airframes (ARVA). Complement 251 to 286.

Transfers
Agenor ARL 3 (ex-LST 490) was ceded to France on 2 Mar. 1951. Patrolcus. ARL
19 (ex-LST 955). transferred to Turkey in 1952. Minotaur, ARL 15 (ex-LST
645), loaned to Korea on 3 Oct. 1955, Romulus, ARL 22, transferred to the Phillppines in 1961. Diomedes, ARB 11, and Ulysses, ARB 9, to West Germany in June
1961. Gordius, ARL 36, to Iran in Sep. 1961. Helias, ARB 12, loaned to Brazil in
lan. 1962. Quirinus, ARL 39 (ex-LST 1151) to Venezuela in June 1962. Aventinus,
ARVE 3 (ex-LST 1092) transferred to Chile in 1963.
Disposals
Demeter, ARB 10 (ex-LST 1121), was stricken from the list on 1 Mar. 1959,
Adonis, ARL 4, Daedalus, ARL 35, Minos, ARL 14, Pentheus, ARL 30, and Proserbine. ARL 21, on 1 Jan. 1960, Crean, ARL 11, Menelaus, ARL 12, on and Proserbine. ARL 21, on 1 Jan. 1960, Crean, ARL 11, Menelaus, ARL 26 and Typhoon, ARL
16. and Numitor, ARL 17, at the end of 1960, Stentor, ARL 26 and Typhoon, ARL
28. in 1960. Amphritrite, ARL 29. Arlstaeus. ARB 1, Chimaera, ARL 33, Caronis,
ARL 10, Oceanus, ARB 2, Phoon, ARB 3, and Poseidon, ARL 12, on 1 July, 1961.



MEGARA

1960, United States Navy, Official

MEDIUM LANDING SHIPS (ROCKET)

12 LSMR and 1 YV. 401-412, 501-536 Series

LSMR

I CMD

401 BIG BLACK RIVER
405 BROADKILL RIVER
409 CLARION RIVER
412 DES PLAINES RIVER
501 ELK RIVER
YV 3 TARGETEER (ex-Gunnison River, LSMR 508)
512 LAMOILLE RIVER

513 LARAMIE RIVER 515 OWYHEE RIVER 522 RED RIVER 525 ST. FRANCIS RIVER 531 SMOKY HILL RIVER 536 WHITE RIVER

Displacement: Dimensions: Machinery:

Complement:

944 tons attack (1,084 tons full load) LSMR 410-412: $206\frac{1}{4}$ (a.a.) $204\frac{1}{4}$ (w.l.) $\times 34\frac{1}{7} \times 7\frac{1}{6}$ feet LSMR 501-536: $203\frac{1}{7}$ (a.a.) $197\frac{1}{7}$ (w.l.) $\times 34\frac{1}{7} \times 7\frac{1}{6}$ feet L—5 inch, 4—42 inch mortars, 4—40 mm, AA. 8—20 mm, AA., 10—5 inch rocket projectors G.M. diesel 2 shafts. B.H.P.: 2,800=12·6 kts. 137 (7 officers, 130 men)

Modified LSMs. The ten automatic rocket launchers are continuously fed, each firing thirty spin-stabilised 5-inch rockets per minute, a barrage of 300 per clip. All LSMRs were named on 1 Oct. 1955. All out of commission, in reserve, except Clarion River, LSMR 409, St. Francis River, LSMR 525, and White River, LSMR 536, all recommissioned in 1965

Gunnison River, LSMR 508, was reclassified as a drone Aircraft Catapult Control Craft, YV 3, on 9 May 1960 and renamed Targeteer on 26 June 1960.

rnotographs
A port bow view of Owhyes River appears in the 1957-58 to 1962-63 editions. a starboard bow oblique aerial view of Blackstone River in the 1957-58 edition, a starboard broadside surface view of St. Joseph River in the 1953-54 to 1959-60 editions, a port broadside surface view of LSM 297 in the 1957-58 and 1958-59 editions and a port bow oblique aerial view of LSM 458 in the 1952-53 to 1957-58 editions.

Transfers

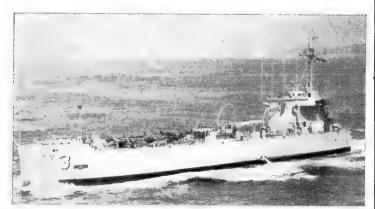
Transfers
Smyrna River, LSMP 532, and Thames River, LSMR 534, were transferred to
West Germany on 5 Sep. 1958, and St. Joseph River, LSMR 527, to Korea in 1960.

Disposals
Big Horn River, LSMR 402, Blackstone River, LSMR 403, Black Warrior River,
LSMR 404, Charlton River, LSMR 407, Charles River, LSMR 408, Escalante River,
LSMR 502, Flambeau River, LSMR 503, Grand River, LSMR 505, Green River, LSMR
506, Greenbrier River, LSMR 507, Holston River, LSMR 509, Pearl River, LSMR
516, Pit River, LSMR 518, Powder River, LSMR 519, Rainy River, LSMR 521, St.
Croix River, LSMR 524, St. John's River, LSMR 519, Rainy River, LSMR 528,
Salmon Falls River, LSMR 530, Snake River, LSMR 533, and Trinity River, LSMR 535
were stricken from the Navy List in 1959, and Canadian River, LSMR 406, Clark
Fork River, LSMR 410, Cumberland River, LSMR 411, Gila River, LSMR 504, James
River, LSMR 510, John Day River, LSMR 510, Maurice River, LSMR 514, Pee Dee
River, LSMR 517, Raccoon River, LSMR 520, Republican River, LSMR 523, and
St. Regls River, LSMR 529, on 1 Feb. 1960.



BIG BLACK RIVER

1963, United States Navy, Official



TARGETEER (as Aircraft Control Craft) 1961, United States Navy, Official



ST. FRANCIS RIVER

1960, United States Navy, Official

MEDIUM LANDING SHIPS (LSM)

2 LSM 1-558 Series

LSM 335 (USNS)

LSM 161 (ex-Kodiak)

743 tons beaching (1,095 tons full load)
196\(\) (w.l.), 204\(\) (o.a.)\(\) 34\(\) \(\) 8\(\) feet
2—40 mm. AA. (LSM 335 unarmed)
Diesel direct drive. 2 shafts. B.H.P.: 2,800=12.5 kts. Displacement: Dimensions: Guns: Machinery.

On. tanks. So Only two medium landing ships remain in service. This class could carry 5 medium tanks. Some were fitted with Kirsten cycloidal propellers, enabling the ships to turn 360 degrees and remain in the same position. LSM 335 is assigned to MSTS Kodiak, LSM 161, was decommissioned to reserve on 11 Dec. 1964.

LSM 161, 175, 373 and 540 were named Kodiak, Oceanside, Lakeland and Raritan, respectively, on 14 Oct. 1959, see Transfers and Disposals. The name Kodiak, however, was officially cancelled (effective on 22 Mar. 1965).

Reclassification
LSM 445 and LSM 446 were reclassified as Drone Aircraft Catapult Control Vessels and redesignated YV 1 and YV 2 on 30 Aug. 1954 and renamed Catapult and Launcher, respectively, on 1 June 1957. Catapult decommissioned in 1960 and was discarded with Launcher. See Disposals below.

LSM 398 was reclassified as EAG 398 in Dec. 1956 and named Hunting on 13 July 1957 (she has since been stricken). LSM 444 was transferred to the Atomic Energy Commission on a loan basis in 1957 and subsequently named Aloto. (She was returned to the U.S. Navy in 1960 and loaned to Chile).

Photographs
A port bow oblique aerial view of Catapult, as converted and showing radar masts appears in the 1960-61 edition, a port quarter oblique view of Lakeland LSM 373 in the 1959-60 edition, a port broadside surface view of LSM 297 in the 1957-58 and 1958-59 editions, and a port bow oblique aerial view of LSM 456 in the 1952-53 to 1957-58 editions:

Transfers
LSM 500 was transferred to Denmark on 15 May 1953. LSMs 17, 19, 30, 54, 57, 84, 96, 268, 316, 419, 462 and 546 to Korea in 1956, LSM 491, LSM 537, LSM 553 and LSM 558 to West Germany on 15 Aug, 1959 (first two) and 5 Sep. 1958 (other two), LSM 472 and LSM 474 to Taiwan China at Seattle on 3 Feb. 1959, LSM 539 and LSM 555 to Ecuador in 1959, LSM 444, Aloto to Chile in 1960, LSM 236 to the Philippines on 15 Sep. 1960, LSM 483 to the Dominican Republic in 1960, Oceanside, LSM 175 and LSM 313 to Viet Nam in 1961, LSM 320 and LSM 463 to the Philippines on 17 Mar. 1961, LSM 469 to Thailand in 1962, LSM 362 to Taiwan China in May 1962, LSM 276 to Viet Nam in Mar. 1963.

All LSMs were stricken from the Navy List in 1957 except 13 LSMs and the two YVs but LSM 455, 491, 533, 537, 541, 557 and 558 were stricken in 1958-59, Lakeland, LSM 373, and Raritan, LSM 540, in 1960. Cataputt, YV 1, ex-LSM 445, and Launcher, YV 2, ex-LSM 446, in 1960, Hunting, EAG 398 (ex-LSM 398) on 1 Nov.



LSM 161

1960, United States Navy, Official

SALVAGE LIFTING VESSELS (ARSD)

2 Ex-LSM Type

GYPSY (ex-LSM 549) ARSD I

MENDER (ex-LSM 550) ARSD 2

Displacement: Dimensions: Machinery:

740 tons standard (1,095 tons full load) $224\frac{1}{2}\times34\times7$ feet Diesel. 2 shafts. B.H.P.: 2,800=13 kts.

General

Used as diving tenders. Both launched on 7 Dec. 1945. Gypsy and Mender are in the Pacific Reserve Fleet, Sister ships Sajvager (ex-LSM 551) ARSD 3 and Windlass (ex-LSM 522) ARSD 4 have been loaned to a commercial firm Merrit, Chapman



WINDLASS

Added 1957, Ted Stone

MISSILE RANGE SHIPS

7 Pacific Missile Range Ships. "Victory" Type

T-AGM 1 RANGE TRACKER (ex-T-AG 160) (ex-S.S. Skidmore Victory, MCV 685)
T-AGM 3 LONGVIEW (ex-Haiti Victory, T-AK 238)
T-AGM 4 RICHFIELD (ex-Private Joe E. Mann. T-AK 253, ex-Owensboro Victory)
T-AGM 5 SUNNYVALE (ex-Dalton Victory, T-AK 256)
T-AGM 6 WATERTOWN (ex-S.S. Niantic Victory)
T-AGM 7 HUNTSVILLE (ex-S.S. Knox Victory)
T-AGM 8 WHEELING (ex-Seton Hall Victory)
Displacement: 7 190 sons (Navy links) 10 690 sons fall lead

7,190 tons (Navy light), 10,680 tons full load 455 (o.a.)×62×24 (max.) feet Geared turbines. S.H.P.: 8,500=18 kts. Dimensions:

Machinery: Complement:

General

Complement: 90

General

T-AGM 1:—The 9,000-ton conversion of Skidmore Victory to a missile range instrumentation ship, was authorised in the Fiscal Year 1960 Conversion Programme, Converted by Ingalls Shipbuilding Corp. and assigned to the Pacific Missile Range as Range Tracker. Fitted with telemetry, navigation, timing, aerology, radio command and surveillance equipment. MSTS civil service crew of 17 officers 42 men, and 30 civilian electronic specialists.

T-AGM 3 and T-AGM 5:—Daiton Victory and Haiti Victory (both USNS) were specially equipped to recover satellite capsules or missiles in the Pacific Missile Range, and are fitted with a helicopter deck and hangar for two helicopters, radar plotting equipment, weather sounding devices, and telemetry receivers. The two ships were reclassified and renamed in 1960, Based at Honolulu, Hawaii.

T-AGM 4:—Private Joe E, Mann was fitted out as range instrumentation and telemetry ships for the Pacific Missile Range in Oct, 1958. Based at Pt. Mugu, California, as tracking and recovery ship. Reclassified and renamed in 1960.

T-AGM 6 and T-AGM 7:—Acquired, reclassified and renamed in 1960-61. Converted in 1965 by Avondale Shipyard, Westwego, La. Re-entry ships for Apollo Programme.

Programme. T-AGM 8:oranime.
T-AGM 8:—(VC-2 conversion) converted under the Fiscal Year 1962 programme,
Boland Machinery & Manufacturing Co. Placed in service on 28 May 1964.
nted white: Complement: 57 crew, 15 Navy personnel, 34 technicians.



RANGE TRACKER

1962, United States Navy, Official

I Pacific Missile Range Telemetry Ship. Small Type

T-AGM 2 RANGE RECOVERER (ex-T-AG 161, ex-FS 278)

T-AGM 2:—Acquired from the Army in 1960. Instrumentation and telemetry ship for the Pacific Missile Range MSTS Civil Service crew. Reclassified from T-AG 161 to T-AGM 2 in 1960. AKL type, Displacement 550 tons, length 176 feet, crew 21.

10 Atlantic Missile Range (ex-USAF) Ships

T-AGM 9 GENERAL H. H. ARNOLD (ex-U.S.N.S. General R. E. Collan, T-AP 139)
T-AGM 10 GENERAL HOYT S. VANDENBERG (ex-U.S.N.S. General Harry Taylor,
T-AP 145)

Conversions of C4-5-A3 hulls for monitoring missile and satellite tests. They have Conversions of C4-5-A3 hulls for monitoring missile and satellite tests. They have elaborate electronic installations. The ship control spaces have been shifted aft and the forward superstructure has been removed to accommodate the numerous antennae. Among these is a telemetering antenna 60 feet in diameter, a command control antenna and a high powered precise tracking radar antenna specially located in order to minimise danger from the radiation it generates: These ships were converted in 1962-63 by the Bethlehem Steel Co., Brooklyn and Hoboken Yards with Sperry Rand Corp: as the prime contractor for the conversions. Full load displacement: 16,600 tons, length 532 feet, speed 17 knots. General Hoyt S. Vandenberg was christened at Baltimore, on 18 July 1963 as a U.S. Air Force Ship, but both ships and the eight following ships, all designated Atlantic Missile Range Ships, were transferred from the Air Force to the Navy (MSTS) in 1964 and designated USNS, with civilian crews.

T-AGM 11 TWIN FALLS (ex-Twin Falls Victory)

T-AGM 11 TYPIN 1 TO THE TOTAL TOTAL

General

A Liberty ship EC2-S-C1 type, Converted to a training ship for merchant seamen during the Second World War, and subsequently acquired by the Army and then the Air Force. Underwent a \$2,000,000 refit by Todd Shipyard Corp., Brooklyn, N.Y. in 1961-62 and has one of the most complete instrumentation facilities of any vessel afloat, Since Feb. 1959 this ship has been in operation observing missiles from Cape Kennedy (formerly Cape Canaveral) which fall into the South Atlantic impact area. The ship is equipped to make observations with radar, infra-red tracker, and optical instruments. By using their complete array of tracking devices the observation crew sights in on missile parts as they fall from the upper atmosphere and records physical characteristics of the re-entry. The air conditioned ship is fully equipped with metal and wood-working shops and repair facilities for the electronic equipment. Since each missile is given detailed photographic coverage there is also a complete photographic laboratory.

T-AGM 13 SWORD KNOT

T-AGM 14 ROSE KNOT

T-AGM 15 COASTAL CRUSADER T-AGM 17 TIMBER HITCH

T-AGM 18 SAMPAN HITCH

(ex-Somerset AK 212)

General All former merchant ships, CI-M-AVI type, diesel powered, of the same type as the Coast Guard's Kukui and USNS T-AG 169, 170, 171 and T-APC 116. With the above 10 ships and the 7 Navy ships assigned to the Pacific Missile Range, a total of 17 space tracking and data acquisition ships exist. Eventually there will be 12 ships equipped for telemetry and 8 ships for telemetry data acquisition only.

T-AGM 19 YANGUARD (ex-Mussle Shoals, ex-Mission San Fernando, T-AO 122)
T-AGM 20 REDSTONE (ex-Johnstown, ex-Mission de Pala, T-AO 114)
T-AGM 21 MERCURY (ex-Flagstaff, ex-Mission San Juan, T-AO 126)

General
Former T-2 fleet tankers, Reacquired from the Maritime Administration reserve fleet in Sep. 1964 and renamed on 8 Apr. 1965. Converted by General Dynamics Corp., Quincy, Mass, for completion in Dec. 1965, Mar. 1966 and June 1966, respectively, for Project Apollo use by 1968. Lengthened with new 72-ft. mid-section from 523 to 595 fect. Beam increased by 7ft. to 75 feet, Displacement 21,626 tons. Three computers and tracking, telemetry, ship to shore and ship to space equipment. Crew 44 plus 108 scientists and technicians.

MISSILE EXPERIMENTAL SHIPS

I Experimental Navigational Ship

EAG 153 COMPASS ISLAND (ex-YAG 56, ex-S.S. Garden Mariner)

Measurement: Dimensions: Machinery:

General

17.600 tons $529\frac{1}{2}\times76\frac{1}{4}\times29$ feet G.E. geared turbines. S.H.P.: 19,250=20 kts.

General

Built by New York Shipbuilding Corp., Camden, New Jersey. Converted by New York Naval Shippard, Brooklyn, and commissioned on 3 Dec. 1956 for the development of the Fleet Ballistic Missile. Her mission is to assist in the development and evaluation of a navigation system independent of shore-based aids. (See Navigation notes on S.I.N.S., Ship Inertial Navigational System, in the 1957-58 to 1963-64 editions). The ship was acquired by the Navy from the Maritime Administration. She was modernized to provide excellent living spaces for her crew and accommodation for a large number of scientists to work and live aboard.

Stabilization

One of the most comfortable riding ships in the Navy. She has the best automatic steering available, and has activated fins for roll-stabilization. This system was developed by Sperry Gyroscope Co. When her sister ships roll 15 degrees, Compass Island, in the same seaway rolls about 1½ degrees, a 90 per cent reduction in roll.

Photographs

Photographs

Photographs
A large starboard broadside aerial view appears in the 1958-59 and 1959-60 editions, and a large starboard quarter oblique aerial view in the 1957-58 edition.



COMPASS ISLAND

1960, United States Navy, Official

I Experimental Firing Ship

EAG 154 OBSERVATION ISLAND (ex-YAG 57, ex-S.S. Empire State Mariner)

Displacement: Dimensions:

15,000 tons $529\frac{1}{8}\times76\frac{1}{8}\times29$ feet G.E. geared turbines. S.H.P.: 19,250=20 kts. 350Machinery: Complement:

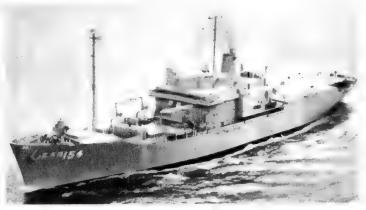
Built by New York Shipbuilding Corp., Camden, New Jersey. Converted by Norfolk Naval Shipyard, Portsmouth, Virginia. Commissioned on 5 Dec. 1958. Experimental vessels for firing "Polaris" (intermediate range inter-continental ballistic missile) in the scheduled programme of test ships. Conversion cost \$20,000,000. Missile Testing

The ship is fitted for complete missile testing, fuellings, servicing and firing, with equipment to evaluate Polaris missiles for launching from surface ships. A new launching tube was installed at Norfolk Naval Shipyard in 1960 to replace one of two tubes formerly installed. The new tube is fitted at a fixed angle. A tiltable tube remains but a vertically fixed tube has been replaced. Both of these were submarine missile launching experiments. Eight to ten different submarine designs and several surface ship designs are being developed, for carrying "Polaris". She carries two "Polaris" missile launchers. She fired the first ship launched Polaris missile, at sea on 27 Aug. 1959. The 28-foot test version of the Polaris was forced 70 feet above the deck by compressed air after which its first stage engine ignited. The ship is installed with complex navigational equipment designed to pinpoint long range surface-to-surface missile firings, She was fitted with the second "Polaris" missile launching tube in Sep. 1959 at Norfolk Naval Shipyard. It is understood, however, that surface firing of the Polaris is no longer under serious study.

Photographs

A large starboard bow surface view of Observation Island appears in the 1959-60 edition.

Cancellation
The proposed conversion of a "Mariner" type cargo ship into a Fleet Ballistic Missile Ship, EAG 155, equipped for long range operations, was cancelled.



OBSERVATION ISLAND

United States Navv. Official

TRANSPORTS

3 "Barrett" Class

BARRETT (ex-President Jackson)

GEIGER (ex-President Adams)

UPSHUR (ex-President Hayes)

Displacement: Measurement: Dimensions: Machinery:

17.600 tons standard (19.600 tons tull load)
12.660 tons gross. 10.600 tons deadweight
500 (pp.). 533 (o.a.)×73×27 feet
Geared turbines. I shaft. S.H.P.: 13,750=19 to 20 kts.
(cruising, see Engineering)
1,900 (400 officers, 1,500 men) see General

Troops:

General General Maritime Administration type P2-SI-DNI. All three were built by the New York Shipbuilding Corporation, New Jersey. Originally laid down as passenger ships for the American President Lines but taken over by the Navy to be completed as troop transports, and were all assigned to the Military Sea Transportation Service as U.S. Naval Ships (non-commissioned naval vessels). Troop carrying capacity of 1,500 plus 396 cabin berths for officers and dependants. Troop lift can be increased by at least 1,000 men if necessary by converting recreation areas into berthing spaces. All spaces, compartments and holds are air-conditioned except the engine room and bridge.

Engineering
On sea trials Barrett attained a speed of 21.5 knots at full power. 1.5 knots more than expected by engineers on the basis of shaft horse power developed.

A larger starboard bow oblique aerial view of *Upshur* appears in the 1957-58 to 1959-60 editions, a larger starboard broadside view of *Barrett* in the 1953-54 to 1956-57 editions, and a port bow aerial view of *Gelger* in the 1960-61 to 1963-64 editions.

Name	No.	Laid down	Launched	Completed
Barrett	T-AP 196	1 June 1949	27 June 1950	15 Dec. 1951
Geiger	T-AP 197	1 Aug. 1949	9 Oct. 1950	13 Sep. 1952
Upshur	T-AP 198	30 Sep: 1949	19 Jan. 1951	20 Dec. 1952



BARRETT

1964, United States Navy, Official

3 P-2 "General" Class

110 GENERAL JOHN POPE (21 Mar. 1945) 117 GENERAL W. H. GORDON (USNS) (7 May 1944) 119 GENERAL WILLIAM WEIGEL (3 Sep. 1944)

Dimensions: Machinery:

11,828 tons standard (20,175 tons full load) 573 (w.l.), $622\frac{1}{2}$ (o.a.) \times 75 $\frac{1}{2}\times25\frac{1}{2}$ (max.) feet De Laval geared turbines. 2 shafts, S.H.P.: 17,000=20·6

kts. Boilers: Troops: Complement:

4 Foster-Wheeler, 465 lb. working pressure 5,240 (320 officers, 4,920 men) capacity 476 (43 officers, 433 men) total accommodation

General

General

All built by Federal S.B. & D.D. Co. at Kearny, General W. H. Gordon, was reacquired from the Maritime Administration, returned to the Navy, and assigned to the MSTS in 1961, being manned by a civil service crew. The three ships manned by Navy crews, were transferred to the Maritime Administration in 1965 and 1966. see Transfers below. They were replaced by General John Pope, General William Weigel (see above) and General Nelson M. Walker (see top of col. 2) manned by civil service crews.

A larger port bow aerial view of General H. W. Butner appears in the 1956-57 to 1959-60 editions, a starboard bow surface view of General A. E. Anderson in the 1951-52 to 1955-56 editions and a port bow oblique aerial view of General William Michell in the 1960-61 to 1963-64 editions.

Transfers
General A. E. Anderson, AP 111, General John Pope, AP 110, General M. C. Melgs, AP 116, and General William Weigel, AP 119, were transferred to the Maritime Administration Reserve Fleet in 1958; but General John Pope and General William Weigel were reacquired by the Navy in 1965 and designated USNS. General H. W. Butner, T-AP 113, was transferred to the Maritime Administration in May 1961, General G. M. Randall, T-AP 115, in Sep. 1962, General J. C. Breckinbridge, T-AP 176, and General W. A. Mann, T-AP 112, in 1965 and General William Mitchell, T-AP 114, in 1966.
Military Sea Transportation Service
On 1. Oct. 1949 the U.S. Navy's Military Sea Transportation Service took over Naval and Army Transport Services, Non-commissioned ships of the Military Sea Transportation Service (U.S. Naval Ships), Transports, Cargo Ships and Tankers are identified by a blue and gold band on their funnels, wih mames painted on each bow and stern prefixed with the letters U.S.N.S, in other respects they are painted as other U.S. Navy Ships, "T" prefixed to designations indicates assignment to MSTS.



GENERAL W. H. GORDON

1964, Skyfotos

Transports—contd.

8 "Admiral" Class

T-AP
120 GENERAL DANIEL I. SULTAN (ex-Admiral W.S. Benson)
121 GENERAL HUGH J. GAFFEY (ex-Admiral W.L. Capps)
122 GENERAL ALEXANDER M. PATCH (ex-Admiral R.E. Coontz)
123 GENERAL SIMON B. BUCKNER (ex-Admiral E.W. Eberle)
124 GENERAL EDWIN D. PARTICK (ex-Admiral C.F. Hughes)
125 GENERAL NELSON M. WALKER (ex-Admiral H.T. Mayo)
126 GENERAL MAURICE ROSE (ex-Admiral Hugh Rodman)
127 GENERAL WILLIAM O. DARBY (ex-Admiral W. S. Sims)

9,676 tons standard (20,120 tons full load) Displacement: 7,076 tons standard (20,120 tons full load) 609 (o.a.)×75½×26½ (29 max.) feet 2 G. E. Turbo-electric, 2 shafts, S.H.P.: 18,000=19 kts. 4 Cumbustion Engineering "D" type 367 (37 officers, 330 men) total accommodation 4,680 (280 officers, 4,400 men) capacity Dimensions: Machinery: Boilers:

Complement: Troops:

General

General

M.C. Type P 2-SE2-R1. Ex-"Admiral" Class. All built by Bethlehem-Alameda in 1944-45, T-AP 125 General Nelson M. Walker (ex-Admiral H. T. Mayo) was transferred to the Maritime Administration in 1958, but was reacquired by the Navy as a result of the Lebaron landings in July 1958. She was stricken from the "List of Naval Vessels" on 20 Jan. 1959, and transferred to the Maritime Administration as excess to MSTS requirements, but was reacquired from Maritime Administration in Sep. 1965, assigned to MSTS and designated USNS.

Photographs

A port bow oblique aerial view of General Simon B. Buckner appears in the 1960-

A port bow oblique aerial view of General Simon B. Buckner appears in the 1960-61 to 1963-64 editions, a large port bow oblique aerial view of General Maurice Rose in the 1952-53 to 1959-60 editions, and a larger starboard bow surface view of General Alexander M. Patch in the 1950-51 and 1951-52 editions.



GENERAL ALEXANDER M. PATCH

1964, Skyfotos

T-AP
154 GENERAL LE ROY ELTINGE

2 "General" Class

T-AP 153 GENERAL R. M. BLATCHFORD

Displacement:

Dimensions:

10,034 tons standard (17,250 tons full load) Vestinghouse turbine. S.H.P.: 9,000=16·5 kts.

Babcock & Wilcox

Machinery: Boilers: 256 (32 officers. 224 men) total accommodation 3,823 (228 officers, 3,595 men) capacity Complement:

General Type C4-S-A 1. "General" Class Built by Kaiser Co., Richmond. California, in 1943-45, Carry 1,500 to 3,000 troops. T-AP 146, 148, 157, 159 were laid up in the Navy's Reserve Fleet in 1954, T-AP 135 and 155 were stricken from the Navy List and transferred to the Maritime Administration in 1956.

Twelve of the "General" class transports. T-AP 134, 137, 138, 139, 140, 143, 144, 145, 150, 151, 156 and 158, were transferred to the Maritime Administration in 1958 as excess to M.S.T.S. requirements (T-AP 134, 137, 143 and 145 were stricken in 1959). Of the remaining ten, T-AP 153 and 154 are in the M.S.T.S. General A. W. Greely, 141, General C. H. Muir, 142, General W. F. Hase, 146, General E. T. Collins, 147, General M. L. Hersey, 148, General I. M. McRae, 149, General C. C. Ballou, 157, and General Stuart Heintzelman, 159 were transferred to the Maritime Administration in 1960. Photographs

A larger starboard bow oblique aerial view of General M. L. Hersey appears in the 1958-59 and 1959-60 editions, a large port bow aerial view of General M. B. Stewart in the 1952-53 to 1957-58 editions, and a starboard quarter oblique aerial view of General W. F. Hase in the 1960-61 editions.

Transfers
Fredrick Funston, T-AP 178, James O'Hara, T-AP 179, David C. Shanks, T-AP 180, Fred C Ainsworth, T-AP 181, George W. Goethals (photograph in the 1952-53 to 1960-61 editions), T-AP 182, and Henry Gibbins, T-AP 183, were stricken and transferred to the Maritime Administration in 1960, as excess to Military Sea Transportation Service requirements. (Henry Gibbins had been turned over to the New York Maritime College at Fort Schuyler as a training vessel on a loan basis).

T-AP 186, Sergeant Charles E. Mower, was stricken in 1960 and transferred to the Maritime Administration in excess to MSTS needs. Sister ship T-AP 185 Private William H. Thomas (ex-Rixey) and T-AP 184 Private Eldon H. Johnson (ex-Pinkney) were transferred to the Maritime Administration late in 1957.

T-AP 202, Marine Serpent, was returned to Maritime Administration in 1955. All four transports of the C-4S-A3 type, T-AP 193 Marine Adder, T-AP Marine Lynx, T-AP 195 Marine Phoenix and T-AP 199 Marine Carp, were transferred to the Maritime Administration in 1958 as excess to MSTS needs. T-AP 184, 185, and 199 were stricken in 1959.



GENERAL LE ROY ELTINGE Added 1961, United States Navy, Official

SEAPLANE TENDERS (AVP) and FLAGSHIP (AGF)

5 "Barnegat" Class

Builders Launched 15 July 1944 2 Oct. 1944 18 Mar. 1945 14 Mar. 1943 CORSON DUXBURY BAY GREENWICH BAY AVP 37 AVP 38 Lake Washington AVP Shipyard, SUISUN Houghton. AGF 1 (ex-AVP 55) VALCOUR 5 June 1943 Wash.

1.766 tons standard (2,800 tons full load)
300 (w.l.), 310\frac{1}{2}(0.a.) \times 41\frac{1}{2} \times 13\frac{1}{2} feet
1.—5 inch, 38 cal., 5.—40 mm. AA. (guns vary)
2 diesels. 2 shafts. B.H.P.: 6,080=18 kts.
215 Displacement: Dimensions: Guns: Machinery: Complement:

General

General
Officially rated as Seaplane Tenders, Small, but actually employed more like patrol vessels. Greenwich Bay, Duxbury Bay and Valcour rotate as COMID EAST Force Flagships. Valcour was reclassified as AGF 1 on 15 Dec. 1965, as Commander Middle East Force Flagship, Rehoboth and San Pablo were fitted for oceanographical surveying. Other ships of this class have been adapted for various duties. Carson and Suisun are in the Pacific Reserve Fleet.

Carson and Suisun are in the Pacific Reserve Fleet.

Gunnery
Original main armament of 4—5 inch guns was severely reduced to save top weight.

Stern armament varies: Suisun has no guns on stern.

Transfer
Oyster Bay, former Motor Torpedo Boat Tender (AVP 28, ex-AGP 6) was transferred to Italy on 23 Oct. 1957, and renamed Pietro Cavezzale. Gardiners Bay, AVP 39, was transferred to the Norwegian Navy on 17 May 1958 and renamed Hadken VII. Orca, AVP 49, was transferred to Ethiopia at the end of 1961 and renamed Ethiopia. Another was transferred to

Greece. Weather Ships Of this class, Abescon, Barataria, Bering Strait, Casco, Castle Rock, Chinoteague, Cook Inlet, Coos Bay, Half Moon, Humboldt, Mackinac, Matagorda, Rockaway, Unimak, Yakutat, were transferred to the U.S. Coast Guard for duty as Weather Ships in 1948-49.

Reclassification

San Carlos, AVP 51, was reclassified as an Oceanographical Research Vessel and renamed Josiah Willard Gibbs, AGOR 1, on 15 Dec. 1958 (see page 395).

Disposals

Barnegat, AVP 10, was stricken from the Navy List on 23 May 1958, (she became Greek M.S. Kentavros: two other ex-AVPs also became Greek merchant ships), Floyds Bay, on 1 Mar. 1960, and Onslow, AVP 48, Shelikof, AVP 52, and Timbalier, AVP 54 in 1960.



DUXBURY

Added 1960, courtesy "Our Navy"

HOSPITAL SHIPS (AH)

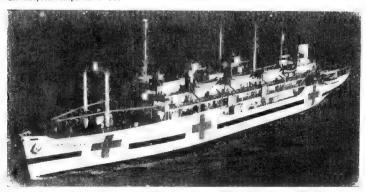
3 "Haven" Type

Ex-Name Launched HAVEN AH 12 AH 16 AH 17 Marine Hawk Marine Beaver Marine Owl 24 June 1944 8 Aug. 1944 15 Aug. 1944 REPOSE SANCTUARY Displacement;

11,141 tons standard (15,400 tons full load) 496 (w.l.), 520 (o.a.)×71½×24 feet G.E. geared turbines. S.H.P.: 9,000=18·3 2 Babcock & Wilcox Accommodation for 574 to 626 Dimensions: Machinery: Boilers: Complement:

General

Built by the Sun S.B. & D.D. Co., Chester, Pa. Maritime Commission C 4-S-B2
Type, Beds for 802 to 922 patients. Air conditioned throughout. Haven first commissioned on 5 May 1945, has a flight deck aft (square red cross landing platform) for the reception and air evacuation of wounded by helicopter. She is in service at Long Beach, California. Consolation was chartered to a private group, operated by American President Lines, as a floating laboratory and medical school in South-East Asia in 1961. She was renamed Hope by the People to People Health Foundation Inc, The U.S. Navy signed the charter on 16 Mar. 1960. The \$200,000 overhaul was undertaken by the Puget Sound Bridge and Dry Dock Company in 1960. Benevolence, AH 13 sank after a collision with a freighter off San Francisco in Aug. 1950. Tranquility, AH 14, transferred to the Maritime Administration Reserve Fleet in 1961. Repose, AH 16, was in Sep. 1962 transferred to Maritime Administration, but was reacquired and recommissioned on 16 Oct. 1965 at San Francisco for Pacific service with complement of 54 officers, 29 nurses and 543 men and 922 bed capacity. Sanctuary was reacquired from Maritime Administration in 1966 and recommissioned for Vietnam service. The green stripe was removed from all hospital ships in 1953. General all hospital ships in 1953.



HAVEN

1964. United States Navy, Official

SATELLITE COMMUNICATIONS SHIP

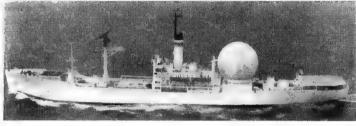
I Ex-AK Type

KINGSPORT T-AG 164 (ex-Kingsport Victory, T-239)

7,190 tons light (10,680 tons full load)
455 (o.a.)×62×24 (max.)feet
Geared turbines 1 shaft. S.H.P.: 8,500=17 kts.
60 crew, 38 Navy technicians Displacement: Dimensions: Machinery: Complement:

Built in 1944 by the California Shipbuilding Corporation, Los Angeles. Former cargo ship in the MSIS fleet. Name shortened, ship reclassified, and converted in 1961-62 by Willamette Iron & Steel Co., Portland, Oregon, into the world's first satelite communications ship, for Project Advent, involving the promotion of a terminal to meet the required military capability for high capacity, world-wide radio communications, using high altitude hovering satellites, and the installation of shipto-shore communications, facilities, additional electric power generating equipment, a helicopter landing platform, aerogical facilities, and a 30-ft, parabolic communication antenna housed in a 53-ft, diameter plastic radome abaft the superstructure. Painted white for operations in the tropics.

Project Advent Syncom satellite relay operations were completed in 1966, and Kingsport has been reassigned to other duties.



KINGSPORT

1964, United States Navy, Official

DEGAUSSING VESSELS (ADG)

I Ex-Fleet Minesweeper Type

ADG 383 SURFBIRD (ex MSF 383)

890 tons standard (1,250 tons full load) 215 (w.l.), 221½ (o.o.)×32½×10½ feet Diesel electric, 2 shafts. B.H.P.: 3,532=18 kts, 70 Displacement: Dimensions: Machinery: Complement:

General
Built by American Shipbuilding Co., Lorain, Ohio. Laid down on 15 Feb. 1944. Launched
on 31 Aug. 1944. Completed (first commissioned) on 25 Nov. 1944. Former Fleet Minesweeper of the steel-hulled type, MSF (ex-AM), reclassified as ADG on 18 May 1957.

3 Ex-Escort PCE Type

ADG 8 LODESTONE (ex-PCE 876 (30 Sep. 1943) 9 MAGNET (ex-PCE 879, 1 Sep. 1943)

Displacement:

640 tons standard (900 tons full load) $184\frac{1}{2}$ (o.a.)×33×9 $\frac{1}{2}$ feet Diesel. 2 shafts. B.H.P.; 2,400=16 kts. Dimensions:

Launch dates above. Named on 1 Feb. 1955. All out of commission, in reserve, Sister ship Ampere, ADG 11 (ex-Drake, AM 359) was stricken from the Navy List on 1 July 1961.



PCE Type

Added 1957, Ted Stone

PATROL VESSELS (YP)

14 Navigation Training Type

YP 654 YP 655 YP 656 YP 657 YP 660 YP 661 YP 662 YP 663

56 tons standard (60 tons full load) 80 (o.a.)×17≩×5 feet Diesel. 2 shafts. B.H.P.: 320 Displacement: Machnery:

General

General
YP 654-663 were built Stephen Bros., Inc., Stockton, Calif. YP 654-658 under the
1956 Fiscal Year Programme, and YP 659-663 under the 1957 Fiscal Year Programme.
All laid down Jan.—Nov. 1957, launched July 1957-Mar. 1958, and completed Mar.
1958-Nov. 1958. YP 664 and 665 were built by Elizabeth City Shipbuilders, Inc.,
Elizabeth City, North Carolina, under the 1959 Fiscal Year Programme. Floating
classrooms for training midshipmen in seamanship and navigation at the United States
Naval Academy. Wooden built construction with aluminium dark bowers. Surface Naval Academy, Wooden hull construction with aluminium deck houses. Surface search radar, gyro and magnetic compass, navigational plotting equipment. Potential patrol craft for national emergency. YP 666 and 667 were built by Stephens Bros, under the 1965 Fiscal Year Programme. Three other patrol vessels, YP 585, 587, 589, are also used for training at Annapolis. YP 647, 648, 649, 650 and 651 were stricken on 1 Mar. 1960, and YP 584, 586, 589 and 590 on 1 Aug. 1964.

AMMUNITION SHIPS (AE)

5 "Suribachi" Class

	No.	Laid	down		Launci	hed	Compl	eted
HALEAKALA	AE 25	10 Mar	. 1958	17	Feb.	1959	3 Nov.	
MAUNA KEA	AE 22	16 May	1955	3	May	1956	30 Mar.	1957
NITRO	AE 23	20 May	1957	25	June	1958	1 May	1959
PYRO	AE 24	21 Oct.	1957	5	Nov	1958	24 July	1959
SURIBACHI	AE 21	31 Jan.	1955	2	Nov.	1955	2 Nov.	1956
Displace	ement:	7,470 tons	light,	10,000	tons	standard	(17,500	tons

full load) 7,500 tons deadweight Measurement:

7,300 tons deadweight 488½ (pp.), 512 (o.a.)×72×29 (max.) feet 4—3 inch, 50 cal. AA. (2 twin mounts) 5team turbines, 1 shaft. H.P.: 16,000=21 kts. 10,000 miles at 18-5 kts. endurance 316 (18 officers, 298 men) Dimensions: Guns: Machinery: Radius

Complement:

Complement: 316 (18 officers, 298 men)

Construction

Designed especially to meet the strenuous requirements of rapid replenishment at sea, Built from the hull up as Navy ships. Have elevators for internal handling of ammunition and explosives, up-to-date methods of stowage, air conditioning, redesigned crew quarters and habitability improvements. Built by Bethlehem, Sparrows Point, Md., Shipyard, Another to have been built under the 1959 programme was cancelled. Nitro and Pyro are fitted with constant tension devices designed for transfer of ammunition.

Conversion

The two "FAST" (Fast Automatic Shuttle Transfer) conversions in the 1963.

Conversion

The two "FAST" (Fast Automatic Shuttle Transfer) conversions in the 1963
Programme, Haleakala and Suribachi, were the first of this class to be modernised for the rapid handling and transfer of missiles up to the size of "Talos." This conversion provides for three holds to be rigged for missile stowage; completely mechanised handling facilities to transfer missiles from stowage to transfer stations; and the installation of the fast automatic shuttle transfer system. This modernisation results in safer missile handling and a greatly reduced transfer time. The two after mountings were removed for the laying on of a helo platform. The remaining three ships underwent the "FAST" conversion in the 1964 conversion programme.

Photographs

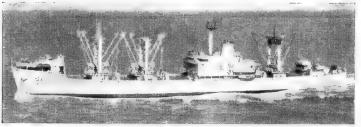
Starboard bow surface view of 5

Starboard bow surface view of Pyro in the 1962-63 to 1964-65 editions.



MAUNA KEA

1965, Hajime Fukaya



SURIBACHI

Added 1960, Skyfotos

AE 28

AE 29

2+ 2 New Construction

AE 26 KILAUFA

AE 27 Displacement: 20,500 tons full load 565 (o.a.)×81 feet 8—3 inch, 50 cal. (4 twin) Geared turbines Dimensions:

General Two authorised in the 1965 programme, First of a new class of ammunition ships with optimum seaworthiness and a sustained speed of 20 knots. Equipped with FAST. To be built by Electric Boat Division, General Dynamics Corp., Quincy, at a cost of \$45,623,162. Kilaula was laid down on 12 Mar. 1966. Will carry helicopters. Two more AE in the 1966 programme to be built by Bethlehem Steel Corpn. will cost \$47,814,000.

7 "Wrangell" Class

AE
19 DIAMOND HEAD (3 Feb. 1945)
14 FIREDRAKE (ex-Wingea Racer, 12 15 VESUVIUS (ex-Gamecock, 26 May 1944)
17 GREAT SITKIN (26 Jan. 1945)
18 WRANGELL (ex-Midnight, 14 Apr. 1946)
Displacement: 6.350 tons light (15.295 tons full land)

1. 1945)
6,350 tons light (15,295 tons full load)
435 (w.l.), 459\{ (o.a.) \times 63 \times 28\} feet
1—5 inch, 4—3 inch, 4—40 mm. AA.
Geared turbines. S.H.P.: 6,000 16.4 kts.
267 Displacement:
Dimensions:
Guns:
Machinery:
Complement:

General

C2 type, A photograph of Wrangell appears in the 1946-47 to 1954-55 editions, of Mount Katmai in the 1955-56 to 1960-61 editions, of Parakutin in the 1961-62 to 1965-66 editions. Disposals Of the

Disposals
Of the two ammunition ships of the "Sangay" class, Sangay was stricken in 1961, and Formalhaut transferred to Maritime Administration in Sep. 1962.



GREAT SITKIN

1966, courtesy Dr. Giorgio Arra

Ammunition Ships-contd.

2 "Andromeda" Class

AE 31 CHARA (ex-AKA 58)

EA 30 VIRGO (ex-AKA 20)

General

Former Attack Cargo Ships. Reacquired in 1965 from Maritime Administration, to which they had been transferred in 1961, and reclassified as Administration Ships on 1 Nov. 1965. Recommissioned in 1966. For particulars see under "Andromeda"

5 "Lassen" Class

AE 5 RAINIER (ex-Rainbow, 1 Mar. 194 6 SHASTA (ex-Comet, 9 July 1941) AE 8 MAUNA LOA (14 Apr. 1943) 5 9 MAZAMA (15 Aug. 1943) 6 4 MOUNT BAKER (ex-Kilauca, ex-Surprise 6 Aug. 1940)

5,220 tons light (14,225 tons full load)
435 (w.l.), 459 (o.a.)×63×26½ feet
1—5 inch, 4—3 inch, 4—40 mm. AA.
2 Nordberg diesels. B.H.P.: 6,000=15·3 kts. Displacement: Dimensions: Guns: Machinery: 281 Complement:

General

General

All built by Tampa S.B. Co. Modified C2 type, converted by Navy. Carries 5,000 tons cargo, Was loss: Mount Hood. A photograph of Mazuma appears in the 1955-56 to 1957-58 editions. Akutan. AE 13, was disposed of in 1961, Mazuma and Mauna Loa were reacquired and returned to the Navy in Sep. 1961 and recommissioned on 27 Nov. 1961. Lassen, AE 3, in 1961 transferred to Maritime Administration.



SHASTA

1965, United States Navy, Official

GENERAL STORES ISSUE SHIPS (AKS)

2 "Altair" Class

ALTAIR (ex-Aberdeen Victory) 20 Apr. 1944 ANTARES (ex-Namba Victory)

4,420 tons light (15,580 tons full load)
455\(\frac{1}{4}\) (0.a.)\(\times 62\times 28\)\(\frac{1}{4}\) (max.) feet
8—40 mm. AA.
Geared turbines. S.H.P.: 8,500=16.5 kts.
230 (17 officers, 213 men) total accommodation Displacement: Dimensions: Guns: Machinery:

General
VC 2-AP 3 type. Laid down in 1944. Altair, AKS 32 (ex-AK 257) was reclassified as AKS in 1952. Now has a helicopter platform on the fantail. Antares, AKS 33 (ex-AK 258) was reclassified as AKS on 1 Apr. 1959.



ANTARES

1962, A. & J. Pavla

2 "Castor" Class

CASTOR (ex-Challenge)

POLLUX (ex-Nancy Lykes) 6,365 tons light, (14,400 tons full load)
435 (pp.), 459\(\frac{1}{2}\) (o.a.)\(\times 63\times 26\(\frac{1}{2}\) (max.) feet
1—5 inch, 4—3 inch
Geared turbines. S.H.P.: 6,000=16·4 kts.
205 (15 officers, 190 men) Displacement: Dimensions: Guns: Machinery: Complement:

Nos. AKS 1 and AKS 4 (ex-AK 54), respectively. C2 Cargo and C2-F types. Cargo capacity: 5,400 tons. Both built by Federal Shipbuilding & Dry Dock, Kearny, N.J., and launched 20 May 1939 and 1941, respectively. Castor completed a \$400,000 internal conversion at San Francisco in 1956 for carrying combined "technical" and general stores. Disposals

Of this type Mercury, AKS 20 (ex-AK 42, ex-Mormactern, ex-Lightning) was stricken in 1960.

stricken in 1960.

All five of the LST type, Chimon, AKS 31 (ex-AG 150, ex-LST 1102), Collington, AKS 29 (ex-AG 148, ex-LST 1085), Electron, AKS 27 (ex-AG 146, ex-LST 1070), League Island, AKS 30 (ex-AG 149, ex-LST 1097), and Proton, AKS 28 (ex-AG 147, ex-LST 1078) were stricken in 1960.

All six of the "Island" class, Avery Island, AKS 24, Belle Isle, AKS 21, Coaster's Harbor, AKS 22, Cuttyhunk Island, AKS 23, Indian Island, AKS 25, and Kent Island, AKS 26, were also stricken in 1960.



CASTOR

Ted Stone

STORE SHIPS (AF)

RIGEL (15 Mar. 1955)
Displacement:
Measurement:
Dimensions: Guns: Machinery:

2 "Rigel" Class

VEGA (26 Apr. 1955)

VEGA (26 Ap 7,950 tons light, 15,540 tons full load 10.850 tons gross 475 (w.l.), 502 (o.a.)×72×29 (max.) feet 8—3 inch

Steam turbine, 1 shaft. S.H.P.: 12,500=18 kts.

General General Contract awarded to Ingall's Shipbuilding Co., Pascagoula on 13 Aug. 1953. R3-5-4A type, Cost \$12,440.000 each. Laid down on 15 Mar. and 24 May 1954. respectively. Launch dates above. Rigel commissioned in 1955 and Vega on 10 Nov. 1955. 360.000 cu. ft. of refrigerated space. These were the first AFs ouilt since the Second World War, with Navy designed hulls. Nos. AF 58 and AF 59, respectively.



RIGEL

1965, A. & J. Pavia

6 "Alstede" Class

ALSTEDE (ex-Ocean Chief) ALUDRA (ex-Matchiess) BELLATRIX (ex-Fleetwood) Displacement: Dimensions:

Machinery; Complement:

PICTOR (ex-Great Republic)
PROCYON (ex-Flying Scud)
ZELIMA (ex-Golden Rocket)
6,914 tons light (15,500 tons full load)
459½×63×28 feet
Turbine. S.H.P.: 6,000=16 kts.
17 officers, 275 men

Complement: 17 officers, 2/3 men

General

Nos, AF 48, AF 55, AF 62, AF 49, AF 61, and AF 54, respectively. All built by
Moore Dry Dock Co. and launched in 1945 and 1946, R2-5-BV design reefer type.

Aludra was acquired for conversion by the Navy. Pictor was transferred from Maritime Administration to U.S. Navy. G2-S-B1 type similar to R2-S-BVI design, except
that R2s were built as reefers and C2s as cargo ships, Same type as "Eagle" class,
Beliatrix and Procyon were acquired from the Maritime Administration and commissioned in Nov. 1961, C2-S-B1 type.



ALSTEDE

1962, Ing. Augusto Nani

2 "Adria" Class

BONDIA (9 Nov. 1944) (U.S.N.S.)

U.S.N.S.) LAURENTIA (ex-Wall and Crown, 12 Dec. 1944) (U.S.N.S.) 3,139 tons light (7,435 tons full load) 320 (w.f.), 338, (o.a.)×50×21 (max.) feet Nordberg diesel, B.H.P.: 1,700=11.5 kts.

Displacement: Dimensions: Machinery: General General

Launch dates above. Nos. AF 42 and AF 44, respectively. Kerstin and Latona were returned to Maritime Commission. 2,100 tons cargo. R1-M-AV 3 type. Bondia and Laurentia are assigned to Military Sea Transportation Service, unarmed. Valentine was transferred to the Maritime Administration by MSTS on 16 Apr. 1999. Adria, Arequipa, Cordoba, Karin, Lloba, Malabar and Merapi were stricken from the Navy List and transferred to the Maritime Administration Reserve Fleet in 1960-61.



BONDIA

1965, Skyfotos

BALD EAGLE

2 " Eagle " Class

BLUE JACKET

Displacement: Dimensions: Machinery:

7,430 tons light (12,800 tons full load) 4591 (o.a.)×63×24 (max.) feet Turbine, S.H.P.: 6,000=16·4 kts.

Both built by Moore Dry Dock Co. Launched in 1942. Nos. T-AF 50 and T-AF 51, respectively. Military Sea Transportation Service Ships designated USNS, MC Type C2-S-B1. Sister ship Golden Eagle was converted, renamed Arcturus (see Col. 2). A photograph of Blue Jacket appears in the 1959-60 to 1964-65 editions.

I "Aldebaran" Class

ALDEBARAN (ex-Staghound)

6,501 tons light (13,860 tons full load)
435 (w.l.), 459\(\frac{1}{4}\) (o.a.)\(\times 63\times 25\)\(\times 6\)\(\times 63\times 25\)\(\times 64\)\(\times 63\times 64\)\(\times 64\)\(\ti Displacement:

Guns: Machinery: 2 Babcock & Wilcox Boilers:

General Launched on 21 June 1939, No. AF 10 C-2 Cargo type. A photograph of Aldebaran appears in the 1957-58 edition.

Store Ships—contd.

2 " Sirius " Class

ARCTURUS (ex-Golden Eagle)

SIRIUS (ex-S.S. Trade Wind)

Displacement:

Dimensions: Machinery:

7.430 tons light (12.800 tons full load) $459\frac{1}{4}$ (oa.) $\times63\times24$ feet Geared turbines. S.H.P.: $6.000=16\cdot4$ kts.

General

C-25-B1 refrigerator ships. Sirius was launched and completed in 1943, acquired by the Navy 1956 renamed, and commissioned on 12 Jan, 1957. She replaced Polaris, which was removed from the Navy List and transferred to the Maritime Administration on 12 Jan, 1957. Arcturus was commissioned on 11 Nov. 1961. Nos. AF 52 and AF 60, respectively.



SIRIUS

1959, United States Navy, Official

2 "Hyades" Class

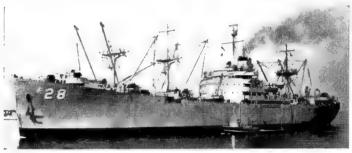
GRAFFIAS (ex-Topa Topa)

HYADES (ex-Iterville)

Displacement: Dimensions: Guns: Machinery; Boilers: Complement:

6.313 tons light (15.300 tons full load)
445 (pp). 463{ (o.a.)×63×28 feet
1—5 inch, 4—3 inch
Geared turbines, S.H.P.: 6,000=15·5 kts.
2 Babcock & Wilcox

Nos. AF 29 and 28. Launched on 12 Dec. 1943 and 12 June 1942, respectively. Cargo capacity 5,300 tons. Another photograph of Hyades appears in the 1954-55 to 1957-58 editions.



HYADES

Added 1959, Ing. Augusti Nani

2 " Denebola" Class

DENEBOLA (ex-Hibbing Victory)

REGULUS (ex-Escanaba Victory)

Displacemen Measurement Dimensions: Guns: Machinery: 6.700 tons light (12.130 tons full load)
8.000 tons deadweight
4551×62×28; feet
8—3 inch, 50 cal. automatic AA. (twin mounts)
Westinghouse geared turbines. I shaft. S.H.P.: 8,500=

Complement:

17 kts. 225

General

General Maritime administration ships acquired by the U.S. Navy in 1952, for conversion to refrigerator store ships. AF 56 and AF 57, respectively. VC2-S-AP 3 type. Built in 1944 by Oregon Shipbuilding Co. Denebola commissioned on 20 Jan. 1954 after conversion by Todd, Brooklyn, Regulus on 3 Feb. 1954. Insulated holds, refrigerated system, quick acting hatch covers. Conversion cost \$8,000,000. Other photographs of Denebola appear in the 1956-57 to 1964-65 editions.



DENEBOLA

1965, courtesy Godfrey H. Walker, Esq.

2 Converted Type

ASTERION (ex-Arcadia Victory)

PERSEUS (ex-Union Victory)

Victory ships (VC 2-S-AP 3 type). Acquired from the Maritime Administration in 1962, and converted at Portland, Oregon, by Willamette Iron & Steel Co. under the 1962 Program. Of the same type as Denebola and Regulus, see above, except they are unarmed and manned by civilian crews. USNS, MSTS, Nos. T-AF 63 and 64, respectively. Disposals

The aviation supply ship Jupiter, AVS 8, ex-AK 43 (ex-Santa Catalina, ex-Flying Cloud) was stricken from the Navy List and transferred to the Maritime Administration Reserve Fleet in Sep. 1964.

VEHICLE CARGO SHIPS (LSV)

2 "Comet" Class

Roll-on Roll-off Amphibious Type

T-LSV 9 SEA LIFT

Boilers:

Displacement:

11,130 tons light, 16,940 tons standard (21,700 tons

11,130 tons light, 16,740 tons standard (21,7 full load)
15,750 tons gross, 12,100 tons deadweight
499½ (pp.), 540 (o.a.)×83×29 (max.) feet
Geared steam turbines. 2 shafts. S.H.P.: Measurement Dimensions: Machinery: 19.400=

20 kts

20 kts. 2 water tube 2,061 tons 10,000 miles at 20 kts. 62 plus 12 passengers Oil fuel: Radius: Complement:

General

General Improved roll-on/roll-off vehicle cargo ship. Maritime Administration C4-ST-67a type. Built by the Puget Sound Bridge & Dry Dock Co., (now Lockheed Shipbuilding and Construction Co.) Seattle, Wash., at a cost of \$15,895,500: Authorised under the Fiscal Year 1963 programme, Laid down on 19 May 1964 and launched on 18 Apr. 1965 for completion in July 1966. Designed for point-to-point sea transportation of Department of Defence self-propelled, fully-loaded, wheeled, tracked and amphibious vehicle and general cargo. Her configuration of internal ramps, stern ramp and side openings will provide for quick loading and unloading. Unarmed and designated MSTS, USNS. A second ship of the class was requested under the Fiscal Year 1964 programme, but funds were not approved. Requested again in Fiscal Year 1965 but again funds not provided. A total of six are planned.

T-LSV 7 (ex-T-AK 269) COMET

Displacement: Measurement: Dimensions: Machinery:

7,605 tons light (18,150 tons full load)
12,750 tons gross, 6,500 tons deadweight
465 (pp.), 499 (o.a.) × 78 × 28½ (max.) feet
G.E. geared turbines, 2 shafts. S.H.P.: 13,200 = 18 kts.
28 abcock & Wilcox
73

Boilers: Complement:

General
Roll-on/Roll-off vehicle carrier built for MSTS by Sun Shipbuilding & Dry Dock
Co. C3-ST-14A type. Laid down on 15 May 1956. Launched on 31 July 1957. Completed on 27 Jan. 1958 (taken over on 30 Sep. 1957), Has ramp system for
loading and discharging. The hull is strengthened against ice. Fitted with stern ramp.
Can accommodate 700 vehicles in two after holds. The forward holds are for
general cargo. Equipped with Denny-Brown Stabilisers. Reclassified from T-AK 269
to T-LSV 7 on 1 June 1963.



COMET

1959. United States Navy

I Ex-LSD Type

T-LSV 8 (ex-AK 273) TAURUS (ex-S.S. Carib Queen, ex-Fort Snelling, LSD 23)

Displacement: Dimensions: Machinery:

6,000 tons standard (9,375 tons full load) 454 (w.l.), $457\frac{1}{4}$ (o.a.) \times 76 $\frac{1}{6}$ \times 18 (max.) feet Westinghouse geared turbines. 2 shafts. S.H.P.: 9,000 = 15.4 kts.

General
Former U.S. dook landing ship. Laid down on 8 Nov. 1944 and hull built by the
Gulf Shipbuilding Corporation, Chickasaw, Ala., in 1945, but not completed because
of the end of the war. Converted into a roll-on/roll-off trailer ship in 1956 for
commercial operation. Acquired by MSTS from the Maritime Administration in 1958.
USNS, civilian crew, Reclassified from T-AK 273 to T-LSV 8 on 1 June 1963.



TAURUS

1964, United States Navy, Official

FAST DEPLOYMENT LOGISTIC SHIPS

2 + 2 New Construction (FDL)

Displacement:

28,000 tons full load 675×100 feet 2 gas turbines. Speed over 20 kts.

General

General

Ships of an entirely new design. Two in the 1966 New Construction Programme. Two in Fiscal Year 1967 Programme for \$67,500,000. Plans for 20 more FDLs. Contract for development, building of 20 to 30 ships; forming of company to operate, supply and maintain the ships for an expected life of 25 years, Project to cost \$1,250,000,000 to \$2,500,000,000. On 15 Dec. 1965 Navy asked for design proposals on 15 to 20 ships. Contractor to be selected in 1966.

Strategically deployed to rendezvous with airlifted troops and marry-up with heavy equipment, Roll-on/Roll-off capability. Army engineer teams on board to handle equipment; bulldozers, trench-diggers. large cranes, lumber, pipe, cement for building of airports and bases, small arms, heavy tanks, amphibious vehicles.

COMBAT STORE SHIPS (AFS)

6 "Mars" Class

AFS 5 CONCORD AFS I MARS

Displacement:

Dimensions:

Guns:

Aircraft: Machinery: AFS 6 AFS 2 SYLVANIA

AFS 3 NIAGARA FALLS AFS 4 WHITE PLAINS

16,500 tons full load
530 (pp.), 581 (o.a.)×79×24 feet
8—3 inch, 50 cal. (4 twin)
2 helicopters (UH-46A Sea Knight)
Steam turbines. I shaft. S.H.P.: 22,003=20 kts.
3 Babcock & Wilcox (one spare)
10,000 miles at 185 kts.
403 (25 officers, 378 men)

Boilers: Radius:

General
All built by National Steel & Shipbuilding, San Diego, California. Of a new design with a completely new replenishment at sea system. "M" frames replace conventional king posts and booms, which are equipped with automatic tensioning devices to maintain transfer lines taut between the ship and the warships being replenished despite rolling and yawing, Helicopters are carried to fulfil vertical replenishment requirements for ships in a task force spread over a wide area. Mars was laid down on 5 May 1962, launched on 15 June 1963 and commissioned on 21 Dec. 1963. Sylvania was laid down on 18 Aug. 1962, launched on 15 Aug. 1963 and commissioned on 11 July 1964, Niagara Falls was authorised in the Fiscal Year 1964 Programme, for laying down on 22 May 1965 and launching on 26 Mar. 1966 White Plains, laid down on 20 Oct. 1965 and launched on 23 July 1966, and Concord, laid down on 26 Mar. 1966, were authorised in the Fiscal Year 1965 Programme, and AFS 6 in the 1966 Programme.



SYLVANIA

1965, United States Navy, Official

FAST COMBAT SUPPORT SHIPS (AOE)

4 Underway Replenishment Type

AOE 1 SACRAMENTO

AGE 2 CAMDEN

AOE 3 SEATTLE AOE 4

Displacement: Dimensions: Guns: Aircraft: Machinery:

19,200 tons light (53,600 tons full load)
793 (o.a.) × 107 × 39½ feet
8—3 inch, 50 cal., (4 twin)
2 cargo helicopters aft. (UH 46A Sea Knight)
Geared turbines. S.H.P.: 100,000=26 kts. sustained speed (engines built for battleship Kentucky)
10,000 miles at 17 kts.
600 (33 officers, 567 men)

Radius: Complement:

General

Complement: 600 (33 officers, 567 men)

A new class of Fast Combat Support Ships (AOE) to supply task forces. Fitted with "FAST". They combine the functions of ammunition ships, cargo ships and fleet oilers. They carry one fifth more fuel than the latest fleet oilers (black oil, diesel oil and aviation spirit), and one quarter the capacity of the latest ammunition ship, including guided missiles, as well as 250 tons of dry cargo and 250 tons of frozen food. Oil capacity 177,000 barriels. Socramento was built by Puget Sound Naval Shipyard under the Fiscal Year 1961 Programme. Cost \$66,000,000. Laid down on 30 June 1961, launched on 14 Sep. 1963 and commissioned on 15 Mar. 1964. Camden was built by New York Shipbuilding Corporation, Camden, New Jersey. Cost \$48,484,000. Laid down on 17 Feb. 1964 for launching on 29 May 1965 and commissioning in Sep. 1966. Seattle, laid down on 1 Oct. 1965 under the Fiscal Year 1965 Programme is being built by Puget Sound Naval Shipyard as is AOE 4, 1966 Programme.



SACRAMENTO

1964, courtesy "Our Navy"

CARGO-FBM RESUPPLY SHIPS (T-AK)

3 New Conversion

T-AK 279 NORWALK (ex-Norwalk Victoy)

280 FURMAN (ex-Furman Victory)
281 VICTORIA (ex-Ethiopia Victory)

Displacement: Dimensions:

11,150 tons full load 455 × 62 feet

General

General
Fleet ballistic missile resupply cargo ships AK (FBM). Norwalk was the first conversion of this VC 2-S-AP 3 type for supporting ballistic missile submarine operations. Designed as a one-stop cargo ship to provide complete resupply of a deployed fleet ballistic missile submarine tender. The logistic support includes "Polaris" missiles, submarine weapons, technical spares, packaged petroleum products, bottled gas, black oil and diesel fuel, general cargo, and frozen and dry provisions. Operated as an independent unit with a civilian (MSTS) crew and with a Navy unit embarked She was converted from a "Victory" ship under the Fiscal Year 1963 Programme by Boland Machine and Mfg. Co., at a cost of \$3,439,792 delivered on 22 Nov. 1963 and accepted on 30 Dec. 1963. Conversion of Furman, authorised under the Fiscal Year 1964 Programme, was completed by American Shipbuilding Co., at a cost of \$3,338,000 in Oct. 1964. Conversion of Victoria, in the F.Y. 1965 Programme, completed by Philadelphia Naval Shipyard in Oct. 1965. All acquired from the Maritime Administration reserve fleet.

CARGO SHIPS (AK)

3 Arctic Type

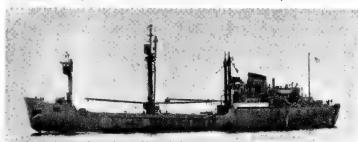
T-AGOR 8 ELTANIN (ex-T-AK 270, 16 jan. 1957)*

T-AK 271 MIRFAK (5 Aug. 1957) T-AGOR 11 MIZAR (ex-T-AK 272, 7 Oct. 1957)*

Displacement: Measurement; Dimensions; 2.036 tons light, 4.942 tons full load 2.486 tons gross, 1,300 tons deadwaight 247; (pp.), 256; (w.l.), 262; (o.a.)<51;×18; feet 2 ALCO diesels with Westinghouse electric motors. 2 shafts. B.H.P.: 3,200=13 kts.

General
Built for MSTS by Avondale Marine Ways, New Orleans, La. Designed for Arctic operation with hull strengthened against ice. C1-M E2-13a type. Laid down on 4 June 1956, 5 July 1956 and 21 Jan. 1957, respectively. Launch dates above. Taken over on 2 Aug. 1957, 4 Oct. 1957 and 22 Nov. 1957. Conversion

* Eltanin was converted in 1961 into a scientific laboratory for Antarctic research program for the National Science Foundation. Equipped to study meteorology, the upper atmosphere, marine and terrestial biology, physical oceanography, submarine geology, and geomagnetic conditions. Owned and operated by MSTS. Reclassified from T-AK 270 to T-AGOR 8 on 15 Nov. 1962. Crew of 48 plus 38 scientific and technical staff. Mizar was reclassified T-AGOR 11 on 15 Apr. 1964.



MIZAR

1960, courtesy Mr. W. H. Davis

2 "Victory" FBM Type

ALCOR (ex-Rockland Victory)

BETELGEUSE (ex-Columbia Victory)

Displacement:

4,420 tons (Navy light), 15,580 tons full load) (Maritime Commission deadweight 10,850 tons) 455 $\frac{1}{2}$ (o.d.)×62×28 $\frac{1}{2}$ (max.) feet 8—40 mm. AA, Geared turbines S.H.P.: 8,500-:16-5 kts.

Dimensions: Guns: Machinery;

General VC2-S-AP3 type. Laid down in 1944. Reactivated for the Navy in late 1951 from the Maritime Administration Reserve Fleet. AK 259 and 260 respectively. Both ships have been fitted with special equipment to transport material and supplies for fleet ballistic missile submarines. Sister ship Antares, AK 258, was reclassified as a General Stores Issue Ship, AKS, see previous page. A photograph of Alcor appears in the 1953-54 to 1957-58 editions.

In the 1753-36 to 1737-36 totalists.

Disposals

Of the "Alcona" class, Sussex, AK 213, was stricken on 1 Jan, 1960, and Alcona, AK 157, Beltrami, AK 162, Faribault, AK 179, and Grainger, AK 184, end 1960.

All six vessels of the "Alchiba" class, namely Alchiba (ex-Charles E. Winsor), Algorab (ex-Elisha Whitney), Aquarius (ex-John D. Whitney), Centaurus (ex-Nathaniel Brown), Cepheus (ex-Richard W. Dixie) and Serpens (ex-William Lester) Ak 261 to 266, respectively, were stricken on 1 Feb. 1960.

I MA Type

T-AK 277 SCHUYLER OTIS BLAND

Displacement: Dimensions: Machinery:

8.918 tons gross, 10.516 tons deadweight $478\!\times\!66\!\times\!30$ feet Steam turbine, Speed=18.5 kts.

Acquired from the Maritime Administration by the Military Sea Transportation Service in July 1961. The only ship of the type (C3-S-DX2 type), Designated USNS with civilian crew, and unarmed.

7 "Victory" Type

T-AK
241 PRIVATE FRANCIS X McGRAW

(ex-Wobash Victory)
242 SERGEANT ANDREW MILLER
(ex-Radcliffe Victory)
243 SERGEANT ARCHER T. GAMMON
(ex-Yale Victory)

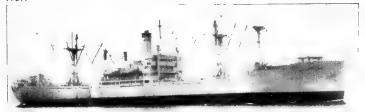
T-AK 244 SERGEANT MORRIS E. CRAIN 244 SERGEANT MORRIS E. CRAIN (ex-Mills Victory) 251 LT. GEORGE W. G. BOYCE (exWaterville Victory) 252 LT. ROBERT CRAIG (ex-Bowling Green Victory)

254 SERGEANT TRUMAN KIMBRO

Displacement: Dimensions: Machinery:

6.700 tons light (12,400 tons full load) $455\times62\times24$ feet Geared turbines. S.H.P.: $6.000=15\cdot5$ kts.

General T-AK 251, 252 and 254 are VC2-S-AP2, the others VC2-S-AP3 type. (AK-278 authorised in Aug. 1962 for the Military Sea Transportation Service, was assigned a new designation and hull number, LSV 9, Sea Lift, see page 409). Pvt. Joe E. Mann, T-AK 253, ex-Owensboro Victory, was fitted out as a range instrumentation and telemetry ship for the Pacific Missile Range in Oct. 1958 and renamed Richfield, T-AGM 4 in 1960 (see page 404). Sagita, T-AK 87 (ex-S.S. Moses Pike) and Vela, T-AK 89 (ex-S.S. Charles A. Roulett) transferred to the Maritime Administration in July 1961 and on 3 Apr. 1959.



SERGEANT MORRIS E, CRAIN

1964, Wright & Logan

Cargo Ships-contd.

1-AR 237 GREENVILLE VICTORY 274 LIEUT. JAMES E. ROBINSON (exT-AG 170, ex-T-AK 274, ex-Czecho-slovakia Victory)

T-AK
240 PRIVATE JOHN R. TOWLE
(ex-Appleton Victory)
275 PRIVATE JOSEPH F. MERRELL (ex-Grange Victory)
276 SERGEANT JACK J. PENDLETON

Displacement: Dimensions: Machinery: 6.720 tons light (12450 tons full load) 455 (o.a.): 62×24 (max.) feet Turbine. S.H.P.: 8,500 -16:5 to 17.7 kts.

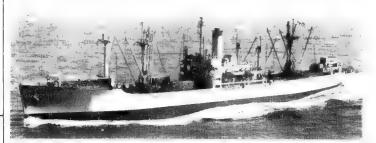
Machinery: Turbine. S.H.P.: 8,500-16-5 to 1//kts.

General
VC2-S-AP3 type. Greenville Victory has been winterized. Dalton Victory and
Halti Victory, renamed Sunnyvale and Longview, respectively, see earlier page (both
USNS) are specially equipped to recover satellite capsules or missiles in the Pacific
Missile Range, and are fitted with a helicopter deck and hangar for two helicopters. Photographs

A photograph of Lieut. James E. Robinson appears in the 1953-54 to 1959-60 editions and of Private John R. Towle in the 1959-60 to 1963-64 editions.

Reclassification
The former Military Sea Transportation Service Aircraft Cargo and Ferry Ships Lieut. James E. Robinson, Private Joseph F. Merrell and Seargant Jack J. Pendleton, AKV 3, AKV 4 and AKV 5, respectively, were reclassified as Cargo Ships, AK 274, AK 275 and AK 276 on 7 May 1959. Kingsport Victory, T-AK 239, was renamed and reclassified Kingsport, T-AG 164 in 1962 for Project "Advent".

Lieut. James E. Robinson, T-AK 274, was to have been transferred to the Maritime Administration. But was modified for special project work and reclassified as T-AG 170 in 1963, and reverted to the original classification T-AK 274 on 1 July 1964.



GREENVILLE VICTORY

1964, Skyfotos

T-AK 180 FENTRESS (EX-V 206) 188 HERKIMER (EX-V 203) 198 MUSKINGUM (EX-V 20

246 COLONEL WILLIAM I. O'BRIEN (ex-Maiden's Eye)

249 SHORT SPLICE

250 PVT. FRANK J. PETRARCA (ex-Long Splice)

2.460 tons light (7.450 tons full load) 338 $f < 50 \times 21$ feet Diesel, B.H.P.: 1,750–11:5 kts.

Displacement: Dimensions: Machinery:

General
C1-M-AV1 Type, Colonel William J. O'Brien and Short Splice were converted to heavy lift ships with two 80-ton cranes during Aug.-Nov. 1954.

Transfers
T-AK 200, Pembing and T-AK 245, Captain Aria L. Olsen (ex-Bell Ringer) were transferred to the Maritime Administration in 1958. Pembing, T-AK 200, and Private John F. Thorson, T-AK 247, were stricken from the Navy List in 1959. Sergeant George Peterson, T-AK 248, was transferred to the Maritime Administration by the MSTS. Pvt. Fronk J. Petrarca, T-AK 250, was stricken on 9 Apr. 1959, but was reacquired by the MSTS in 1960. Hennepin, T-AK 187 (ex-V 205) and Sergeant George Peterson, T-AK 248, stricken on 27 Mar. 1959, were transferred to the Maritime Administration.



SHORT SPLICE

1958, A. & J. Pavia

2 Heavy Lift Type

T-AK 255 PVT. LEONARD C. BROSTROM (ex-Marine Eagle)

T-AK 267 MARINE FIDDLER

Dimensions:

520 (o.a.) \times 72 \times 33 feet Geared turbine, S.H.P.: 9,000-17 kts.

General
C4-S-B1 and C4-S-B5 Types, respectively. Marine Fiddler was built in 1945, and acquired from the Maritime Administration Reserve Fleet in 1952. Both were converted to heavy lift ships for carrying locomotives and general cargo in 1954.

A photograph of Private Leonard C. Brostrom appears in the 1954-55 to 1957-58 editions.



MARINE FIDDLER

1964, United States Navy, Official

DOCK CARGO SHIP (AKD)

T-AKD 1 POINT BARROW (25 May 1957)

Displacement:

5,940 tons light, 9,415 tons standard (14,094 tons full load)
12,000 tons gross, 4,020 tons deadweight
462 (pp.), 475 (w.l.), 492 (o.a.)×78×22 feet
Turbine, 2 shafts S.H.P.: 6,000=18 kts.
10,000 miles cruising
66 plus 42 transients Measurement: Dimensions: Machinery:

Radius: Complement:

General
Built for MSTS by Maryland Shipbuilding & Dry Dock Co. Laid down on 18 Sep.
1956 and commissioned on 28 Feb. 1958. Delivered to MSTS on 29 May 1958.
52-ST-23A type. Roll-on, Roll-off ship to load vehicles on ramp and have overhead gear for general cargo. Arcticised and adapted for polar exploration, Ballasting arrangement permits embarking and debarking landing craft as in Dock Landing Ships. An aerial view of the ship, showing after deck and well, appears in the 1959-60 to 1963-64 editions.



POINT BARROW

1964, Skyfotos

LIGHT CARGO SHIPS (AKL)

3 "Camano" Class

AKL 25 BANNER (ex- Capt. Wm. M. Galt, ex-FS 345) AKL 28 BRULE (ex-FS 370) AKL 12 MARK (ε x-FS 214, ex-AG 143)

General

Small cargo carriers taken over from the Army. Armament: 20 mm. AKL 25 and AKL 28, were named, armed and commissioned in 1952 (ex-USNS). Sharps (AKL 10) was transferred to Korea under MDAP in 1956). Banner was converted to a special project ship in 1965. Disposals

Disposals

Tingles, AKL 13, was stricken from the Navy List in 1959, Camano, AKL 1,

Estero, AKL 5, Hewell, AKL 14, and Jekyl, AKL 6, in 1960, Deal. AKL 2, and

Ryer, AKL 9, in July 1961 and sold in 1962.

Alcyone (ex-FS 195), Alhena (ex-FS 257), Almaack (ex-FS 283), Delmos (ex
FS 390), Pamina (ex-FS 528) and Renate (ex-FS 547), same type as "Camano"

class, acquired from the Army in 1952, AKL 37-42, respectively, formerly on loan

to Korea but carrying U.S. names and designations, were stricken on 1 Feb. 1960.

I Ex-CG Type REDBUD

General
T-AKL 398. Former U.S. Coast Guard Tender (WAGL), Launched on 11 Sep. 1943. Of "Basswood" class (see later page), transferred to Navy for special transport and supply service in Greenland, and in Feb. 1952 to Military Sea Transportation Service as multi-purpose freighter combination icebreaker, light cargo vessel and radio communications ship, USNS.

3 T-AKL Type

AKL 17 (ex-New Bedford, ex-FS 289)

AKL 27 (ex-FS 369) T-AKL 31 (ex-FS 407)

General

General
Same type as "Camano" class; but unarmed Complement 23. T-AKL 35 was transferred to the Korean Navy in 1956. T-AKL 31 is operated by MSTS, AKL 27 was overhauled by Tacoma Boatbuilding Co. in July-Aug. 1965. AKL 17 is operated by the Naval Torpedo Station, Keyport, Wash.

by the Naval Torpedo Station, Reyport, Wash.
Disposals

T-AKL 33 was stricken from the list on 26 Apr. 1958. T-AKL 24 and 34 in 1959,

T-AKL 15, 16, 18, 19, 21, 23, 26 and 36 on 1 May 1959. 1 Nov. 1959 and in 1960. AKL 29 in 1960. AKL 20, 22, 30 and 32 in July 1961. T-AKL 43 on 1 Oct. 1943.

COASTAL TRANSPORT (APC)

I T-APC Type

T-APC 116 SERGEANT JONAH E. KELLY (ex-Link Splice)

2.460 tons light (7.460 tons full load) 3381 \times 50 \times 21 feet Dicsel. B.H.P.: 1.750=11·5kts. Displacement: Dimensions:

Machinery;

General

General

Military Sea Transportation Service coastal transport. C1-M-AV1 Type. Private Jose F. Valdez was re-acquired from the Maritime Administration and returned to the Navy in Aug. 1961, and reclassified as T-AG 169 in 1963. She and T-AG 171 (see below and on page 414) are Special Project Ships. Disposals Of this type, Sergeant George D. Keathley, T-APC 117 (ex-Acorn Knot, ex-Alexander R. Niminger, Sr.), and Sergeant Joseph E. Muller, T-APC 118 (ex-Check Knot), were transferred to the Maritime Administration in 1959, but the latter was reacquired in 1962 and reclassified as T-AG 171 in 1963.

SALVAGE TENDERS (ARST)

2 Ex-LST Type

Numbered ARST 1 and ARST 3, respectively, Former Tank Landing Ships, Out of commission, in reserve.

Photographs A photograph of Polmyro appears in the 1949-50 to 1957-58 editions.

CABLE REPAIR SHIPS (ARC)

2 "Aeolus" Class

ARC 3 AEOLUS (ex-Turandot, AKA 47) ARC 4 THOR (ex-Vanadis, AKA 49)

Displacement:

7,000 tons
400 (w.l.), 426 (o.a.)×58×16 feet
Westinghouse turbo-electric, S.H.P.: 6,000=16.9 kts.

Machinery:

General

Acolus (laid up in the Maritime Administration Reserve Fleet since June 1946)
was re-acquired by the Navy on 4 Nov. 1954. Both converted to Cable Laying or
Repair Ships by the Key Highway Plant of Bethlehem Steel, Baltimore, Maryland.
Acolus commissioned in May 1955. Thor, built by Walsh Kaiser Company, Providence,
commissioned on 3 Jan. 1956. Unarmed.



THOR

1966



AEOLUS

Added 1961, United States Naay, Official

2 "Neptune" Type

ARC 2 NEPTUNE (ex-William H.G. Bullard) T-ARC 6 ALBERT J. MYER

Measurement: Dimensions: Machinery:

3,929 tons gross, 4,860 tons deadweight $322\times47\times33\frac{1}{2}$ feet Reciprocating Unaflow engines. 2 shafts, I.H.P.: 4,800 = 14 kts.

Neptune was built by Pusey and Jones Corpn., Wilmington, Del. Launched in 1945. Completed in Feb. 1946. Acquired from the Maritime Administration in 1953. Sister ship Afbert J. Myer, U.S. Army Cable Ship, on loan to the Military Sea Transportation Service, was acquired by the Navy in 1966 and designated T-ARC 6. These two ships are the only ones of their class. Both of the S3-S2-BP1 type.



NEPTUNE

United States Navy, Official

Transfer

The cable repair ship of the ex-LSM type, Portunus, ARC 1 (ex-LSM 275) was transferred to Portugal on 1 May 1959. Disposals

The cable repair ship of the wooden type, Nashawena, YAG 35 (ex-AG 142) was stricken in 1960.

stricken in 1760.

The cable repair ship Yamacraw, ARC 5 (ex-U.S.C.G. WARC 333, ex-ACM 9, ex-Trapper) originally an Army minelayer and subsequently a U.S. Navy auxilliary minelayer, afterwards employed as a U.S. Coast Guard cable layer, then a U.S. Navy cable repair ship until 1959, was stricken on 1 July 1965 and transferred to the Maritime Administration.

REPLENISHMENT FLEET OILERS (AOR)

2 + 2 New Construction

AOR 2

Displacement: Dimensions: Guns: Machinery:

Boilers: Radius.

AOR 1 WICHITA

40,000 tons full load 40,000 tons rull load 675 (o.a.)×96×35 feet 8—3 inch, 50 cal (4 twin) Geared turbines, 2 shafts, 20 kts, 3 (18 kts, on 2 boilers) 10,000 miles at 17 kts, 345 (20 officers, 325 men)

Complement: General

General
Two authorised under the Fiscal Year 1965 Programme, Fitted with helicopter platform. Will provide rapid replenishment at sea of petroleum products, ammunition, provisions and fleet freight to the operating forces. Being built by General Dynamics Corporation, Quincy. Two more AOR are in the 1966 programme.

NETLAYERS (AN)

I "Cohoes" Class

AN 83 NAHANT

Displacement: Dimensions: Guns: Machinery:

Complement:

650 tons standard (785 tons full load) 146 (w.l.), $168\frac{1}{2}$ (o.a.) $\times 33\frac{8}{3}\times 11\frac{7}{3}$ (max.) feet 1—3 inch

Busch-Sulzer diesel-electric. S.H.P.: 1,200=12 kts.

46 (4 officers, 42 men)

General Built by Commercial Iron Works, Portland, Oregon, Laid down on 31 Mar. 1945 and launched in June 1945. Transfers

Of this class. Tonowondo, AN 89, was transferred to Haiti in 1960, Marletta, AN 82, to Venezuela in Jan. 1961, Tunxis, AN 90, and Waxsaw, AN 91 to Venezuela in 1963.

Manayunk, AN 81, Naubuc, AN 84, Suncock, AN 80, and Tunxis, AN 90, were transferred to the Maritime Administration National Defence Reserve Fleet in 1961 but stricken from the Navy List in Sep. 1962. Cohoes, AN 78, Etlah, AN 79, Oneota, AN 85, Passaconaway, AN 86, Passalc, AN 87, Shakamaxon, AN 88, and Yazoo, AN 92, were stricken in July 1963 and transferred to the Maritime Administration Reserve Fleet, Suncock, AN 80, was retransferred to the Bureau of Mines in Oct. 1954.



NAHANT

Added 1964, United States Navy, Official

I "Tree" Class

AN 9 BUTTERNUT

Displacement: Dimensions: Guns: Machinery:

560 tons standard (805 tons full load) 146 (w.l.) 163 (o.a.) \times 30½ \times 11½ (max.) feet 1—3 inch, AA, Diesel-electric. B.H.P.: 800=13 kts, 48 (4 officers, 44 men)

Complement:

eneral Former YN. Steel hull. Built by Lake Washington Shipyards, Houghton, Laid own on 11 Mar. 1941, launched on 10 May 1941, completed on 3 Sep. 1941.

of this class, Hackberry, AN 25, Pepperwood, AN 36, and Yew, AN 37, were transferred to France in 1944, Larch, AN 21, to Turkey in 1947, Mulberry, AN 27, to Ecuador in 1965 (on loan), and Locust, AN 22, to France in 1966 (sold). Disposals

Disposals
Aloe, AN 6, Ash, AN 7, Boxwood, AN 8, Catalpa, AN 10, Chestnut, AN 11,
Cinchdna, AN 12, Ebony, AN 15, Eucalyptus, AN 16, Holly, AN 19, Elder, AN 20,
Mango, AN 24, Mimosa, AN 26, Palm, AN 28, Hazel, AN 29, Redwood, AN 30,
Rosewood, AN 31, Sandalwood, AN 32, Nutmeg, AN 33, and Teak, AN 35,
were transferred to the Maritime National Defence Reserve Fleet in 1961, but
stricken from the Navy List in Sep. 1962. Teaberry AN 34 was stricken in 1961,
and disposed of in 1962. Buckeye AN 13, and Buckthorn, AN 14, were stricken
in July 1963 and transferred to the Maritime Administration Reserve Fleet.



BUTTERNUT

1964, United States Navy, Official

SOUND TESTING EXPERIMENTAL SHIP

MISSION CAPISTRANO AG 162 (ex-AO 112)

Displacement: Dimensions: Machinery: Complement:

17.000 tons
523\(\frac{1}{2}\) (o.a)\(\times 68\times 30\) feet
Turbo-electric. S.H.P.: 10.000-16 kts.
74 civilian crew plus 52 special parties

General

This former orier of the "T2-SE" Type (see later page) was converted by Todd Shipyards. New Orleans, into a sound testing experimental ship in connection with operations of Texas Tower Argus Island off Bermuda. Fitted with a sound transducer assembly five stories high. Used to test the huge sonar transducer in a giant new sonar system for detecting submarines at long range. The transducer can be raised and lowered as desired. Project "Artemis".



MISSION CAPISTRANO

1962, courtesy Mr. W. H. Davis

SUBMARINE RESCUE VESSELS (ASR)

8 "Chanticleer" Class

ASR 13 KITTIWAKE (10 July 1945) 14 PETREL (26 Sep. 1945) 15 SUNBIRD (3 Apr. 1945) 16 TRINGA (25 June 1945) ASR 7 CHANTICLEER (29 May 1942) 8 COUCAL (29 May 1942) 9 FLORIKAN (14 june 1942) 10 GREENLET (12 july 1942)

1.653 tons standard (2,141 tons full load)
240 (w.l.), 251; (o.a.)×42×148 (max.) feet
Diesel-electric. (Alco in first 4 ships, G,M, in others).
1 shaft, B.H.P.; 3,000-14-9 kts. Displacement: Dimensions: Machinery:

Complement:

General ASR 7-10 were built by Moore S.B. & DD. Co., Oakland, Calif., and 13-16 by Savannah Machine & Foundry Co., Savannah, Ga. Launch dates above. Large tug type. All are equipped with powerful pumps, heavy air compressors and special submarine rescue chambers. Guns were removed 1957-58. General



KITTIWAKE

1962, A. & J. Pavia

2 "Penguin" Class

ASR
12 PENGUIN (ex-Chetco, 20 July 1943) 20 SKYLARK (ex-Yustaga, 1946)
Displacement; 1,235 tons standard (1,675 tons full load)
Dimensions: 195 (w.l.), 205 (o.a.)×38½×15½ (max.) feet
Guns. 1—3 inch, 2—40 mm. AA. (may be removed)
Diesel-electric. B.H.P.: 3,000=16·5 kts. Complement:

General

General Former fleet tugs, adapted for present service in 1947. Built by Charleston S.B. & D.D. Co., Charleston, S.C. Bluebird ASR 19, was transferred to Turkey on 15 Aug. 1950. The fleet tugs Luiseno and Papago (see later page) are also fitted out as submarine rescue vessels. A photograph of Penguin appears in the 1961-62 and 1962-63 editions.



SKYLARK

1963. A. & I. Pavia

SALVAGE VESSELS (ARS)

13 "Escape" Class

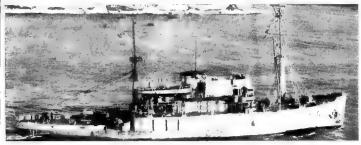
ARS
38 BOLSTER (23 Dec. 1944)
39 CONSERVER (27 Jan. 1945)
22 CURRENT (25 Sep. 1943)
23 DELIVER (25 Sep. 1943)
6 ESCAPE (22 Nov. 1942)
7 GRAPPLE (31 Dec. 1942)

ARS
4) 24 GRASP (31 July 1943)
945) 40 HOIST (31 Mar. 1945)
13) 41 OPPORTUNE (31 Mar. 1945)
143) 8 PRESERVER (1 Apr. 1943)
1 42 RECLAIMER (25 June 1945)
2) 43 RECOVERY (4 Aug. 1945)
25 SAFEGUARD (20 Nov. 1943)
1,530 tons standard (1,900 tons full load,
207 (w.l.), 213 (o.a.)×39 or 43×13 feet
4—40 mm. AA.
Diesel-electric. 2 shafts. B.H.P.: 3,000=14 kts.
85 Displacement: Dimensions: Guns: Machinery: Complement: 85

General

Built by Basalt Rock Co. Cable, ARS 19. Curb, ARS 21 and Gear, ARS 34, are on loan to a private operator. Clamp (ex-Atlantic Salvor), ARS 33, was stricken in July 1963 and transferred to the Maritime Administration Reserve Fleet. A photograph of Bolster appears in the 1946-47 to 1957-58 editions, and of Safeguard in the 1958-59 to 1963-64 editions. the 1958-5 Conversion

Conversion
Choin and Snatch were converted into Oceanographic Research Ships in 1958-60
Choin, ARS 20, converted by the Savannah Machine & Foundry, was assigned to the
Woods Hole Oceanographic Institute by the Office of Naval Research. Snatch, ARS
27 converted by Puget Sound Bridge and Drydock Co. was assigned to the Scripps
Institute of Oceanography by the ONR. Complement of 40 plus 28 scientists. Four
laboratories, and winches for specialised work. Renamed Argo.



PRESERVER

1964, A. & J. Pavia

MINESWEEPING BOATS (MSB)

48 Shallow Draught Type

MSB	MSB	MSB	MSB	MSB	MSB	MSB
- 11	18	25	31	37	43	49
13	19	26	32	38	44	50
14	20	27	33	39	45	51
15	21	28	34	40		52
16	22	29	35	41	47	53
17	23	30	36	42	48	54
	11 13 14 15	11 18 13 19 14 20 15 21 16 22	11 18 25 13 19 26 14 20 27 15 21 28 16 22 29	11 18 25 31 13 19 26 32 14 20 27 33 15 21 28 34 16 22 29 35	11 18 25 31 37 13 19 26 32 38 14 20 27 33 39 15 21 28 34 40 16 22 29 35 41	11 18 25 31 37 43 13 19 26 32 38 44 14 20 27 33 39 45 15 21 28 34 40 46 16 22 29 35 41 47

Displacement:

30 tons light (42 tons full load) except MSB 29, 81

tons full load $57\frac{1}{4} \times 15\frac{1}{2} \times 4$ feet (MSB 29, $82 \times 19 \times 5\frac{1}{2}$ feet) Diesel engines. 2 shafts. B.H.P.: 600=10 kts. Dimensions:

Machinery: Complement: 6 to 8

General

MSB 5-54 have wooden hulls, Designed to be carried in parent ships to theatre of operations. All built in 1951 and 1952, except MSB 29, launched on 5 Oct. 1956. Engineering

Engineering
MSB 5 was the first vessel built for the U.S. Navy with gas turbine engines (used to provide the power for the boat's generators. 48 MSBs were fitted with gas turbine generators. MSB 23, destroyed by fire on 2 Feb. 1955 while under construction was rebuilt as a plastic hulled vessel and delivered in Aug. 1956. MSB 24 was never built.

Class

Class B. MSB 5-22, 25-28, 30-54; Class C: MSB 29 (see Disposals)

Of the four ex-Army MLMs built in 1946, which constituted Class A. MSB I and MSB 3 were stricken on 1 Nov. 1958, and MSB 2 and MSB 4 were transferred to Korea and Taiwan China, respectively, in Dec. 1961. MSB 12 was stricken on 1 Apr. 1964.



MSB 8

1957, courtesy "Our Navy"

DEPOT SHIPS (APB)

8 "Ex-LST" Type

APB 35 BENEWAH (ex-APL 35) 36 COLLETON (ex-APL 36) 46 DORCHESTER (ex-AKS I ex-LST 1112) ex-LST I 37 ECHOLS (ex-APL 37)

APB
47 KINGMAN (ex-AKS 18, ex-LST 1113)
39 MERCER (ex-APL 39)
40 NUECES (ex-APL 40)
48 VANDERBURGH (ex-AKS 19, ex-LST [14)

Displacement: Dimensions:

2,189 tons (light), 4,080 tons full load 316 (w.l.), 328 (o.a.) \times 50 (extreme) \times 11 feet 40 mm. (No. of guns varies) G.M. diesels. 2 shafts. B.H.P.: 1,600 to 1,800=12 kts. (APB 41-50), 10 kts. (APB 35-40)

General (APB 41-50), 10 kts. (APB 35-40)
Officially rated as Self-Propelled Barrack Ships (APB), All ex-LST type ships of the same basic characteristics, Benewah and Colleton are to be recommissioned in 1967.

Disposals Disposals
Sister ships Accomac, APB 49, Cameron, APB 50, Presque Isle, APB 44, Wythe, APB 41, Yavapai APB 42, and Yola, APB 43, were stricken from the Navy List in 1959, Blackford, APB 45 (ex-AKS 16, ex-LST 1111) in 1960, and Maribora, APB 38, on 1 Dec. 1963.
The barrack ship Dupage, APB 51 (ex-S.S. John R. Weeks), converted "Liberty" type merchant vessel, was stricken on 1 June 1959.



Aldo Fraccaroll

Disposals of Motor Mine Planters
YMP 1 (ex-JMP 70), former Army Junior Mine Planter was stricken in 1961 and
sister ship YMP 2 (ex-Sergeant Truman O. Olson) on 1 Feb. 1960 (YMP 3 a new
ship, was transferred to Turkey in 1958 under the Mutual Defence Assistance Programme). Disposals of Radar Picket Ships

Disposals of Radar Picket Ships

When the seaward extension of radar barriers was disestablished in 1965 all the sixteen Radar Picket Ships were decommissioned and returned to the Maritime Administration. They were stricken from the Navy List on 1 Apr. 1965. (AGR 3 Skywatcher, AGR 9 Investigator, AGR 12 Vigil): 1 July 1965 (AGR 4 Searcher, AGR 14 Interpreter); and 1 Sep. 1965 (AGR 1 Guardian; AGR 2 Locator; AGR 5 Scanner; AGR 6 Locator; AGR 7 Picket, AGR 8 Interceptor, AGR 10 Outpost, AGR 11 Protector, AGR 13 Interdictor, AGR 15 Interrupter and AGR 16 Watchman).

UTILITY LANDING CRAFT (LCU)

21 "1610 Class" (LCU)

LC	Ü	1610	LCU	1614	LCU	1618	LCU	1622	LCU	1626
LC	:U	1611	LCU	1615	LCU	1619	LCU	1623	LCU	1627
LC	U	1612	LCU	1616	LCU	1620	LCU	1624	LCU	1628
LC	U	1613	LCU	1617	LCU	1621	LCU	1625	LCU	1629
									LCU	1430

Displacement: Dimensions: Guns: Machinery:

200 tons light (342 tons full load)
135½ (o.a.) × 29 × 5½ feet
2—20 mm AA
Diesels. 2 shafts. B.H.P.: 1,000=11 kts. (LCU 1620, 12 kts.). See Engineering

Complement: Construction

Construction

LCU 1610-1619, authorised in the 1956 programme are longer than the older craft. LCU 1613-1619 were built by Gunderson Bros. Engineering Corp., Portland, Oregon (contract awarded May 1957) and LCU 1610-1612 by Christy Corp., Sturgeon Bay, Wisconsin. All laid down in Feb.-Dec. 1958 and launched in July 1958—Mar. 1959 Their original LST-type bow doors were changed to a ramp as in the older type, LCU 1622, authorised under the 1957 programme, had the same hull as the 1610 class but was equipped with vertical axis propellers and ramp type bow doors. Built by Weaver Shipyards, Texas, she is a steel vessel, powered by diesel engines and equipped with Kort nozzles, LCU 1623 and 1624 were built under the 1959 programme by Gunderson Bros., LCU 1620 and 1621 were built under the 1959 corporation, Slidell, Louisiana. LCU 1625, in the 1963 programme, was built by Southern Shipbuilding Corp. with cycloid propellers, and delivered in July 1965. LCU 1626, 1629, 1630 also Southern Shipbuilding Co., and LCU 1627 and 1628 by General Ships & Engines Inc., both 1965 programme. programme

programme. Engineering

LCU 1621 is fitted with two right-angle drive propulsion units, port and starboard, which rotate through 360 degrees, providing thrust in any direction. The two units can be locked together or operated independently, and obviate the need for rudders and shafts. LCU 1620 has two 500 H.P. engines on vertical shafts fitted with vertical-axis cycloidal propellers (six-bladed). The LCU of he "1610" class, authorised under 1957 programme designed for a gas-turbine propulsion unit (an LCU has been fitted with a gas turbine fire pump) was not built.



LCU 1624

1962. United States Navy, Official

LCU 1609

2 "1608" Class (LCU)

LCU 1608
Displacement:
Dimensions:
Machinery:

200 tons light (375 tons full load) 115×34×6 feet

3 diesels. B.H.P.: 495=10 kts. Kortnozzle propellers

General
These utility landing craft of new design were authorised in the 1955 programme under development contract with the Bethlehem Steel Company, Staten Island. Laid down 25 Feb. 1957 and Mar. 1957, respectively, and completed in July 1957.

Reclassification
All LCU types were reclassified from Service Craft to "Boats" in Nov. 1958.

40 "1466" Series (ex-LCT)

LCU	1466	LCU	1475	LCU	1486	LCU	1494	LCU	1536
7Cn	1467	LCU	1476	LCU	1487	LCU	1495	LCU	1537
LCU	1468	LCU	1477	LCU	1488	LCU	1497	LCU	1539
LCU	1469	LCU	1481	LCU	1489	LCU	1498	LCU	1547
LCU	1470	LCU	1482	LCU	1490	LCU	1499	LCU	1548
LCU	1471	LCU	1483	LCU	1491	LCU	1500	LCU	1559
LCU	1472	LCU	1484	LCU	1492	LCU	1525	LCU	1576
LCU	1473	LCU	1485	LCU	1493	LCU	1535	LCU	1582

Displacement: Dimensions:

180 tons light (360 tons full load)
115 (w.l.), 119 (o.a.) × 34 × 6 (max.) feet
2—20 mm.
3 diesels. 3 shafts. B.H.P.: 675=10 kts.

Machinery:

General

Contracts announced on 2 Nov. 1951. Basically the same as Second World War LCTs. Slightly longer and wider. Chief mission is still that of putting tanks and their crews on to beaches. Designation was changed from LCT to LSU because of their many additional uses, and subsequently (1952) to LCU. Built to be transferred on LSTs and off-loaded into water from LSTs. Five units were transferred to other countries under MDAP. 1478 to Norway, 1479, 1480, 1501, 1502 to Indo-China. One (LCU 1503) was lost in Aug. 1953. LCU 1594-1607 were built as an off-shore procurement for the Military Aid Programme (OSP/MAP) See photograph of LCU 1599 (Japanese built) in the 1958-59 to 1964-65 editions.

26 LCU "501-1465" Series (ex-LCT 6)

LCU	539	LCU	660	LCU	768	LCU	1045	LCU	1387
LCU	588	LCU	666	LCU	780	LCU	1124	L.CU	1430
LCU	599	LCU	667	LCU	803	LCU	1241	LCU	1451
LCU	608	LCU	674	LCU	871	LCU	1348	LCU	1459
LCU	654	LCU	742	LCU	893	LCU	1384	LCU	1462
								LCU	1463

Displacement: Dimensions: Guns: Machinery: Complement:

143 tons to 160 tons light (309 tons to 320 tons full load) 105 (w.l.), 119 (o.a.) × 32½ × 5 (max.) feet 2—20 mm. Gray Marine diesel. 3 shafts, B.H.P.: 675=10 kts.

General

General Conversion of Nos. 1273, 1330, 1363, 1452, 1463, 1347 for Arctic service was completed in Mar. 1949. Formerly rated as Landing Ships, Tank (Small). Re-designated LSUs late 1949. Reclassified as LCUs on 15 Apr. 1952. Can carry 4 tanks or 200 tons of cargo. Sixteen of hese craft were recommissioned in 1956 for Vietnam service. Reclassification

LCUs 509, 637, 646, 709, 716, 776, 851, 916, 973, 989, 1126, 1165, 1203, 1232, 1385, 1388 and 1496 were reclassified YFU 54 to 70, respectively, on 1 Mar.

Disposals

LCU 815 was sold in May 1956, LCU 676, 1288 and 1362 were disposed of in 1957. LCU 1460 was lost at sea in 1952, LCU 569, 767, 1258, 1447, 1453 and 1454 were stricken in 1957, LCU 638, 700, 779, 1174, 1225, 1271, 1278 in 1958. LCU 1212, 1244, 1367, 1429 were transferred to foreign countries under the Military Aid Programme in 1959, LCU 1538 was sold in 1959 and LCU 1530 in 1960.

SPECIAL PROJECT SHIPS

2 Special Project Type

T-AG 169 (ex-T-APC 119) PRIVATE JOSE E. VALDEZ (ex-Round Splice, ex-Joe J. Martinez) T-AG 171 (ex-T-APC 118) SERGEANT JOSEPH E. MULLER (ex-Check Knot)

2,460 tons light (7,460 tons full load) 338½ ×50 ×21 feet Diesel. B.H.P.: 1,750=11.5 kts. Displacement: Dimensions: Machinery:

Now classed as auxiliaries, see particulars under Coastal Transports on page 406. T-AG 170 was reclassified as T-AK 274 in 1964, see page 405.



PRIVATE JOSE F. VALDEZ

1965. United States Navy Official

15 Forward Depot Type

T-AG 172 PHOENIX (ex-Arizona, ex-Capitol Victory)
T-AG 173 PROVO (ex-Utah, ex-Drew Victory)
T-AG 174 CHEYENNE (ex-Wyoming, ex-Middlesex Victory)
T-AG 179 HAVERFORD (ex-S.S. Mercer Victory)
T-AG 180 ANTIOCH (ex-S.S. Alfred Victory)
T-AG 181 ADELPHI (ex-S.S. Alfred Victory)
T-AG 182 LYNN (ex-S.S. Lynn Victory)
T-AG 183 CLARKSBURG (ex-S.S. Clarksburg Victory)
T-AG 184 CLEMSON (ex-S.S. Linenwood Victory)
T-AG 185 CARTHAGE (ex-S.S. American Victory)
T-AG 186 BESSEMER (ex-S.S. Bessemer Victory)
T-AG 187 MILFORD (ex-S.S. Greeley Victory)
T-AG 188 RADCLIFFE (ex-S.S. Princeton Victory)
T-AG 189 ROLLINS (ex-S.S. High Point Victory)
Displacement: 6,700 tons light (2,400 tons full)

6,700 tons light (2,400 tons full load) $455\times62\times64$ feet Geared turbines. S.H.P.: 6,000=15.5 kts. Displacement: Dimensions:

Machinery: General

General
Forward depots in the Pacific T-AG 172, 173, 174, were acquired in 1963
from the Maritime Administration. In the MSTS and designated USNS. Four more
requested in 1966, but in fact twelve were acquired from the Maritime Administration Reserve Fleet on 1 Feb. 1966, T-AG 179 to 190.



CHEYENNE

1965. United States Navy, Official

2 Survey Support Type

T-AG 175 SERGEANT CURTIS F. SHOUP

3.000 tons light (7,410 tons full load) 3.9×50×21 feet Diesel, B.H.P.: 1,750=11.5 kts. 49 (11 officers, 34 men, 4 survey personnel) Displacement: Dimensions:

Complement:

eneral CI-M-AVI Type. Survey Support Ship. Navy Oceanographic Office, South West cific Survey. Rated as Auxiliary (AG). Same type at T-AG 169 and T-AG Pacific Surv 171, above.

T-AG 177 SHEARWATER (ex-FS 411) General

Acquired from the U.S. Army, and placed in service on 1 May 1964 for remote Pacific Islands Project. T-AG 178 FLYER (ex-S.S. American Fiyer)

Displacement: Dimensions:

7,360 tons light (11,000 tons full load) $459\frac{1}{2}$ (0.0.)×63×28 feet Turbines: S.H.P.: 6,000=17 kts.

Machinery: General

Acquired from Maritime Administration on 9 Feb. 1965 for Project "Caesar". C2-S-BI type, USNS unarmed.

2 Experimental Research Type

YAG 40 GRANVILLE S. HALL
(ex-Iro Neison Morris) YAG 39 GEORGE EASTMAN

Displacement: 6,000 tons

Steam reciprocating, H.P.: 2,500=11 kts. (See Dimensions;

General
Liberty ships of the EC 2-S-CI type built in 1943-44, acquired by the Navy in 1952-53 as Experimental Minefield Sweepers. Several have been used as guinea-pig ships in sweeping minefields. Remote engine room controls on bridge. Replaced in service in 1962. Assigned their former merchant ship names as Navy names in 1963. Now used as special project and research ships. The experimental minefield sweeper YAG 37 (ex-John L. Sullivan) was scrapped in 1958. YAG 36 (ex-Floyd W. Spencer) and YAG 38 (ex-Edward Kavanagh) were stricken in 1960.

The Fleet X-ray examination ship Whidbey, AG 141, was stricken on 1 May 1959.

VACHTS

SEQUOIA, AG 23
Displacement:
Dimensions:

110 tons *light* 105×21×5 feet 1 diesel, B.H.P.: 400 Machinery

Built in 1925 by J. H. Mathis Co. Used as flagship of the Secretary of the Navy.

There are three other Navy yachts:—FREEDOM (IX 43), SALUDA (IX 87), ROYONO (IX 235). Highland Light (IX 48), was stricken on I Apr. 1965.

The Presidential Yacht HONEY FITZ, 92 ft., is also Navy operated.

PETROL CARRIERS (AOG)

2 "Alatna" Class

T-AOG 81 ALATNA (6 Sep. 1956) T-AOG 82 CHATTAHOOCHEE (4 Dec. 1956)

Displacement: 5.720 tons

3,720 tons 3,200 tons gross, 3,445 tons deadweight 2,730 tons liquid cargo=30,000 barrels 285\(\frac{1}{2}\) (pp.), 302 (o.d.)\(\times\)16\(\times\)19 feet Diesel-electric, 2 shafts. H.P.: 3,400=12 kts. Measurement: Capacity: Dimensions: Machinery:

General

TI-MET-24a type Built for MSTS by Bethlehem Steel, Staten Island, N.Y.
Laid down on 16 Mar. 1956 and 1 May 1956, respectively. Delivered in June
and August 1957. Both have bows strenghtened for navigation in ice, and are
equipped with a helicopter flight deck.



CHATTAHOOCHEE

1960, courtesy Mr. W. H. Davis

4 "Peconic" Class

T-AOG T-AOG 78 NODAWAY (ex-Belridge)
79 PETALUMA (ex-Raccon Bend) USNS 80 PISCATAQUA (ex-Cisne) USNS 77 RINCON USNS

2,060 tons light (6,000 tons full load) 325 (o.o.)×48×19 (max.) feet Diesel. 1 shaft. B.H.P.: 1,400=10 kts. 30,000 barrels Displacement: Dimensions: Machinery:

Capacity: Merchant crew:

TI-M-BT2 design. Assigned to MSTS and are non-commissioned naval vessels. USNS, unarmed. All built by Todd, Houston. Nodaway was reacquired from the Maritime Administration in 1965. Photographs

A photograph of Tonti appears in the 1957-58 to 1963-64 editions, Disposals
Of this class Peconic, AOG 68, was transferred to the Maritime Administration in 1960, and Tonti, AOG 76, in 1961.



PETALUMA

1964, United States Navy, Official

10 "Patapsco" Class

AOG 50 CHEWAUCAN (22 July 1944) 7 ELKHORN (15 May 1943) 8 GENESEE (23 Sep. 1943) 9 KISHWAUKEE (24 July 1943) 52 MATTABESSET (11 Nov. 1944)

AOG 55 NESPELEN (10 Apr. 1945) 56 NOXUBEE (3 Apr. 1945) 1 PATAPSCO (18 Aug. 1942) 58 PINNEBOG (12 May 1945) (USAF) 11 TOMBIGBEE (18 Nov. 1943)

1,850 tons light (4,335 tons full load) 292 (w.l.). $310\frac{3}{2}$ (o.g.) $\times 48\frac{1}{2} \times 15\frac{3}{2}$ (m Displacement: 292 (w.l.), $310\frac{1}{2}$ (o.a.)× $48\frac{1}{2}$ × $15\frac{1}{2}$ (max.) feet 3—3 inch d.p., 50 cal Diesel-electric. 2 shafts. B.H.P.: 3,300=14 kts. 81 (6 officers, 75 men) Guns: Machinery: Complement:

Launch dates above. Navy designed. All built by Cargill Inc., Savage, Minnesota. Kishwaukee, Noxubee and Patapsco were reacquired from the Maritime Administration and recommissioned in 1966.

Photographs A photograph of Pecatonica appears in the 1953-54 to 1957-58 editions, and of Mattabesset in the 1962-63 to 1964-65 editions. Disposals

Disposals
Maquoketa. T-AOG 51, was stricken, Kern, AOG 2, Wabash, AOG 4, and Maquoketa AOG 51, were transferred to Maritime Administration in 1958 and Susquehanna, AOG 5, in 1959-60. Ontonagon, AOG 36 was stricken from the Navy List and returned to Maritime Administration on 13 Nov. 1957. Agawam, AOG 6, Nemasket, AOG 10, and Rio Grande, AOG 3 were diposed of in 1961. Chestatee, AOG 49, and Wacissa, AOG 59, were stricken in 1963 and scrapped. Transfer

Natchoug, AOG 54 was transferred to Greece under the MDAP on 1 Aug. 1959. Pinnebog is on loan to the U.S. Air Force, Pecatonica, AOG 57, was transferred to Taiwan China in Apr. 1961. Namakagon, AOC 53, was loaned to New Zealand in



CHEWAUCAN

1965, Dr. Giorgio Arra

FLEET OILERS (AO)

T-AO 165 AMERICAN EXPLORER

16,500 tons gross 22,525 tons deadweight 615 (o.a.)×80×44½ feet Steam turbines, S.H.P.: 22,000=20 kts. Measurement: Dimensions:

T5-S-RM2a type. Laid down on 9 July 1957. Launched on 11 Apr. 1958. Built by Ingalis Shipbuilding Corporation, Pascagola, for the Maritime Administration, but acquired by MSTS. Rated as U.S. Naval Ship with civil service crew.



AMERICAN EXPLORER

1961, United States Navy, Official

3 "Maumee" Class

T-AO 149 MAUMEE (16 Feb. 1956)

T-AO 151 SHOSHONE (17 Jan. 1957) T-AO 152 YUKON (16 Mar. 1956)

Measurement: Dimensions:

T-AO 152 YUKON (16 Mar 7,950 tons light 16,500 tons gross, 25,000 tons deadweight 591 (w.l.), 620 (o.a.)×83½×32 feet Turbine; S.H.P.: 20,460=18 kts.

Machinery: General

Yukon, laid down 16 May 1955, by Ingalls, Pascagoula delivered May 1957. Maumee laid down 8 Mar. 1955, delivered Dec. 1956. Shoshone laid down 15 Aug. 1955 by Sun Shipbuilding, Chester, delivered Apr. 1957. T5-5-12A type. Potomac, T-AO 150, sank at Morehead, N.C., after exlosion on 26-67 Sep. 1961, but was rebuilt in 1963-64 and renamed S.5. Shenandoah, chartered to MSTS. A photograph of Maumee appears in the 1962-63 and 1963-64 editions.



SHOSHONE

1964, United States Navy, Official

6 Large Type

General General

First. AO 143, built by Bethlehem Steel Company, Quincy, Mass, AO 144-148 by New York Shipbuilding Corporation, Camden, New Jersey. Mississinewa commissioned 18 Jan. 1955. Launch dates above. Truckee laid down 21 Dec. 1953. Panchatoula 1 Mar. 1954. Largest Navy oilers built. Carry 180,000 barrels in 24 tanks. The 2—5 inch, 38 cal. guns were removed in 1960 and a helicopter platform laid on in place of the after 5 inch gun. A photograph of Neosho appears in the 1955-56 to 1959-60 editions, and of Truckee in the 1960-61 to 1963-64 editions.



PONCHATOULA

Boilers:

PAWCATUCK

1964, United States Navy, Official

5 "T3-S2-A3" Type (Jumboised)

105 MISPILLION (10 Aug. 1945) 106 NAVASOTA (30 Aug. 1945)

107 PASSUMPSIC (31 Oct. 1945) 108 PAWCATUCK (19 Feb. 1945) 109 WACCAMAW (30 Mar. 1946)

Displacement: Dimensions: Guns: Machinery:

11,000 tons light, (34,750 tons full load)
646 (a.a.)×75×35½ feet
4—3 inch, 50 cal. AA. (single)
Turbines. 2 shafts. S.H.P.: 13,500=18 kts.

290 (16 officers, 274 men)

Complement:

Navasota and Waccamaw, jumboised under the 1963 programme, (recommissioned on 28 Dec. 1964 and 26 Feb. 1965), other three under the 1964 programme. Conversion increased the oil cargo capacity from 100,000 to 150,000 barrels.



1962, Stefan Terzibaschitsch

Fleet Oilers-contd.

16 "T2-SE" Type

T—AO

134 MISSION SANTA YNEX

187 Springs, 1943)

Necessity, 1942)

180 PECOS (ex-Corsicana, 1942)

180 PIONEER VALLEY

181 OF SAUGATUCK (ex-Newton, 1942)

182 SHAWNEE TRAIL

182 SHAWNEE TRAIL

184 SUAMICO (ex-Harlem Heights 1941)

185 TALLUAH (ex-Valley Forge, 1944)

185 S130 tons light (22,380 tons full load)

186 S03 (w.l.), 523 (o.a.)×68×31 (max.) feet

184 A 1 type Turbo-electric. S.H.P.: 6,000=15 kts.

185 A 2 type S.H.P.: 1,000=16 kts.

2 Babcock & Wilcox T—AO

67 CACHE (ex-Stillwater 1942)

78 CHEPACHET (ex-Eutaw Springs, 1943)

77 COSSATOT (ex-Fort Necessity, 1942)

79 COWANESQUE (ex-Fort Duquesne, 1942)

MISSION BUENAVENTURA

MILLICOMA (ex-Conastega, 1943)

MISSION SANTA CRUZ

MISSION SANTA CRUZ

DISTRACTORY

Displacement: Dimensions: Machinery:

T2-S E-Al and T2-S E-A2 design, All assigned to Military Sea Transportation Service with the prefix U.S.N.S. (U.S. Naval Ship). Civilian manned, Navy-owned tankers, operated by commercial shipping firms under contract to the Navy. Several are equipped with an aluminum portable aircraft cargo deck. Mission Santa Clara, T-AO 132, was loaned to Pakistan in Jan. 1963. Shawnee Trail, T-AO 142 was required from Maritime Administration on 20 Jan. 1965 to replace Mission San Antonio which was stricken.

Antonio which was stricken.

Conversion

Mission Capistrano, AO 112, converted into AG 162, a sound testing experimental ship (see earlier page). Two T-2 type are to be enlarged to 585×80 feet and 30,000 tons displacement under the F.Y. 1965 conversion programme.



MISSION SAN RAFAEL

1966, Skyfotos

24 "T3-S2-A1" Type

AO

22 CIMARRON (7 Jan. 1939)
55 ELOKOMIN (19 Oct. 1943)
32 GUADALUPE (ex-Esso Raleigh, 1940)
27 KASKASKIA (ex-Esso Richmond, 1939)
58 MANATEE (19 Feb. 1944)
57 MARIAS (21 Dec. 1943)
60 NANTAHALA (1943)
4 PLATTE (8 July 1939)
25 SABINE (ex-Esso Albany, 27 Apr. 1940)
53 SALAMONIE (ex-Esso Columbia, 1940)
61 SEVERN (31 May 1944)
62 TALUGA (10 July 1944)
64 TOLOYANA (6 Jan. 1945) AO
97 ALLAGASH (14 Apr. 1945)
51 ASHTABULA (22 May 1943)
56 AUCILLA (ex-Escanaba, 20
Nov. 1943)
52 CACAPON (6 June 1943)
53 CALIENTE (26 Aug. 1943)
88 CALOOSAHATCHEE 1945)
99 CANISTEO (6 July 1945)
30 CHEMUNG (ex-Esso Annapolis 9 Sep. 1939)
54 CHIKASKIA (2 Oct. 1944)
100 CHUKAWAN (28 Aug. 1945)

Displacement: 25,525 tons full load. Jumboised ships 34,700 tons 25,525 tons full load. Jumboised ships 34,700 tons full load
553 or 644 (o.a.)×75×31½ feet
1—5 inch, 4—3 inch (Chemung, Guadalupe, Kaskaskla, Sabine, Cimarron, Platte, Salamonie, 3—5 inch; Cacapon, 4—3 inch, 50 cal., Chipola, 2—3 inch, 50 cal.). 8—3 inch (4 twin) in Jumbos Geared turbines. 2 shafts. S.H.P.: 13,500=18 kts. 4 Foster-Wheeler (Cimarron, 4 Babcock & Wilcox) Exceeds 6,000,000 gallons 64 Dimensions: Guns: Machinery:

Boilers: Cargo capacity: Complement:

War losses: Mississinewa, Neosho. Nine of this class, including Ashtabula, Caloosahatchee and Canisteo, are being "Jumboised" and re-armed with 8—3 inch, 50 cal. guns in 4 twin mounts, two forward and two aft. A new central tank section will increase the length to 644 feet and the displacement to 34,700 tons.



ELOKOMIN

1962, courtesy E. Wood, Esq.

4 ''T2-A'' Type

AO
41 MATTAPONI (ex-Kalkay, 1942)
47 NECHES (ex-Askal, 1941)
TAPPAHANNOCK (ex-Jorkay, 1942) KANKAKEE (ex-Colina, 1941) KENNEBEC (ex-Corsicana, 1940)

6,013 tons light 502 (o.a.)×68×301 (max.) feet 8—40 mm, AA. Turbine. 1 shaft. S.H.P.: 12,000=16·7 kts. 2 Babcox & Wilcox Dimensions: Guns: Machinery:

Tappahannock was reacquired from Maritime Administration and recommissioned 965-66. A photograph of Kennebec appears in the 1949-50 to 1957-58 editions, nd of Mattaponi in the 1957-58 to 1960-61 editions. Disposals

"T3-S-A1" type: Enoree, AO 69, and Niobrara, AO 72, were stricken in Dec.

'T2-A'' type: Merrimack, AO 37, and Monagahela, AO 42, were stricken in 1958

Dec. 1958.

Distilling ships, ex-oilers, of the "Pasig" class, Abatan, AW 4 (ex-Mission San Lorenzo, AO 92, and Pasig, AW 3 (ex-Mission San Xavier, AO 91) transferred to the Maritime National Defence Reserve Fleet in 1960-61, but Abatan was reacquired in Sep. 1962 and returned to Maritime Administration custody in Nov. 1962. (now at Guatanamo Bay, Cuba, with only the distilling plant activated).

FAST PATROL CRAFT (PCF)

104 "Swifts"

Dimensions: Guns:

50×15×4 feet

50×15×4 feet
1-3·2 inch mortar, 3-50 cal. M.G. (twin 50 cal. M.G. in tub over pilot house, combined over and under mount aft of 50 cal. M.G. and 81 mm. mortar)
2 G.M. V 12 diesels. 2 shafts. B.H.P.: 960=28 kts. 6 (1 officer, 5 men). Three crews for every two boats, one relieved after every patrol.

Machinery: Complement:

neral "'Swift" boats, 50 original plus 54 additional from Sewart Seacraft Inc., Berwick, Built in 1965-66 for use in patrol operations along the Vietnamese coast, aminium hull. PCF 4 was mined and sunk off South Vietnam on 14 Feb. 1966. other PCF was sunk off Vietnam on 22 May 1966.



1966, courtesy Mr. W. H. Davis

RIVER PATROL BOATS (PBR)

160 "Plastics"

Dimensions:

Guns:

 $31\times12\frac{1}{2}\times3$ feet 2—50 cal. M.G. (1 twin) forward, 1—30 cal. M.G.

afr

diesels. B.H.P.: 440=over 25 kts.

Machinery: Complement:

General "Plastic" boats. 160 of one class built by United Boat Builders, Bellingham, Washington, between Dec. 1965 and Apr. 1966 Fibreglass hull. Weight 7 tons with crew and equipment. Water-jet propulsion system. No propeller or rudder, For use in Vietnam.



PBR 2

1966, courtesy Mr. W. H. Davis

ICEBREAKERS (AGB)

Of the five icebreakers formerly in the U.S. Navy, Edisto, AGB 2 (ex-AG 89) was transferred to the Coast Guard on 20 Oct. 1965, Staten Island (ex-Northwind), AGB 5 (ex-WAGB 278) in Feb. 1966, Glacier, AGB 4 on 30 June 1966, Atka (ex-Southwind), AGB 3 (ex-WAGB 280) on 20 Oct. 1966, and Burton Island, AGB 1 (ex-AG 88) on 1 Nov. 1966.

AUXILIARY OCEAN TUGS (ATA)

18 "Maricopa" Class

ACCOKEEK (ATA 181) ALLEGHENY (ATA 179) CAHOKIA (ATA 186) CATAWBA (ATA 210) KALMIA (ATA 184) KEYWADIN (ATA 213)

KOKA (ATA 185)
MAHOPAC (ATA 196)
PENOBSCOT (ATA 188)
SAGAMORE (ATA 208)
SALISH (ATA 187)
SAMOSET (ATA 190)

STALLION (ATA 193) SUNNADIN (ATA 197) TATNUCK (ATA 195) TILLAMOOK (ATA 192) UMPQUA (ATA 209) WANDANK (ATA 204)

Displacement: Dimensions: Guns: Machinery

34 tons standard (835 tons full load)
134 (w.l.), 143 (a.a.)×33§×13 feet
1—3 inch, 50 cal. dual purpose
2 G.M. diesel-electric, 1 shaft. B.H.P.: 1,500=13 kts.

45 (5 officers, 40 men)

Complement: General

Ex-ATRs (Ocean Rescue Tugs). All launched in 1943-45. Bagaduce was transferred to the U.S. Coast Guard in 1959, and Wampanoag in 1959, Algorma, ATA 212. Challenge, ATA 201, Geronimo, ATA 207, Iuka, ATA 123, Navajo, ATA 211, Navigator, ATA 203, Nottoway, ATA 183, Reindeer, ATA 189, Sclota, ATA 205, Sonoma, ATA 175, Tunica, ATA 178, Tuscarora, ATA 245, (ex-YTB 341), Unadilla, ATA 182, and Undanted, ATA 199, to the Maritime Administration National Defence Reserve Fleet in 1962. Wateree, ATA 174, to Peru in Nov. 1961. Keosanqua, ATA 198, and Pinola, ATA 206 to Korea on 1 Feb. 1962. Tankowa, ATA 176, to Taiwan China on 5 Apr. 1962, Geromino, ATA 207, to U.S. Fish and Wild Life Service, Sotoyomo, ATA 121, to Mexico in July 1963. Undaunted, ATA 199, to Bureau of Commercial Fisheries in July 1964.

Allagheny is employed in oceanographic research for Office of Naval Research. Guns and towing gear removed, and fitted with after deckhouse.

FLEET OCEAN TUGS (ATF)

30 "Apache" Class

ABNAKI (22 Apr. 1943) ATF 96
APACHE (8 May 1942) ATF 67
ARIKARA (22 June 1943) ATF 98
ATAKAPA (11 July 1944) ATF 149
CHICKASAW (23 July 1942) ATF 83
CHOWANOC (20 Aug. 1943) ATF 100
COCOPA (5 Oct. 1943) ATF 101
CREE (17 Aug. 1942) ATF 84
HITCHITI (29 Jan. 1944) ATF 103
KIOWA (5 Nov. 1942) ATF 85
LUISENO (17 Mar. 1945) ATF 156
MATACO (14 Oct. 1942) ATF 86
MOCTOBI (25 Mar. 1944) ATF 105
MOLALA (23 Dec. 1942) ATF 106

MOSOSPELEA (7 Mar. 1945) ATF 158
MUNSEE (21 Jan. 1943) ATF 167
NIPMUC (12 Apr. 1945) ATF 157
149 PAIUTE (4 June 1945) ATF 159
30 PAPAGO (21 June 1945) ATF 160
100 QUAPAW (15 May 1943) ATF 110
SALINAN (20 July 1945) ATF 161
SENECA (2 Feb. 1943) ATF 91
103 SHAKORI (9 Aug. 1954) ATF 162
SIOUX (27 Mav 1942) ATF 75
TAKELMA (18 Sep. 1943) ATF 113
TAWAKONI (28 Oct. 1943) ATF 114
TAWASA (22 Feb. 1943) ATF 114
TAWASA (22 Feb. 1943) ATF 166
UTINA (31 Aug. 1945) ATF 163

1,235 tons standard (1,675) tons full load) 195 (w.l.), 205 (o.a.) \times 38 $\frac{1}{2}\times$ 15 $\frac{1}{2}$ (max.) feet 1—3 inch 4 diesels, electric drive. B.H.P.: 3,000=16·5 kts. Displacement: Guns: Machinery:

Complement:

Comprement: 63

General

Launch dates above. Fitted with powerful pumps and other salvage equipment.

Wateree (ATF 117) lost, Sarsi (ATF 111) sank after striking a mine off Korea, 27

Aug. 1952. A photograph of Sioux appears in the 1950-51 to 1957-58 editions and of Lulseno in the 1958-59 to 1964-65 editions. Chippewa, ATF 69, Moreno, ATF 87, Narrogansett, ATF 88, Achomawl, ATF 148, Alsea, ATF 97, Pownee, ATF 74, Tenino, ATF 115, and Wenatchee, ATF 118, were stricken in 1961, and Carib, ATF 82, Chawasha, ATF 181, Chimariko, ATF 154, Hidatsa, ATF 102, Hopi, ATF 71, Ilcarlla, ATF 104, and Pakana, ATF 108, in 1963. Avovel and Chilula were transferred to the Coast Guard in 1956. Luiseno and Papago are fitted as submarine rescue vessels. Serrano, ATF 112, was reclassified as survey ship, AGS 24. Yuma, ATF 94, was transferred to Pakistan on 25 Mar. 1959. Tekesta, ATF 93 to Chile in 1960, Cusabo, ATF 155, to Ecuador in 1960, Choctaw, ATF 70, to Columbia in 1961, Menominee, ATF 73 to Indonesia in 1961, Pinto, ATT 90 to Peru in 1961, Arapaho, ATF 68, and Cahuilla, ATF 152, to Argentina in 1961, Tolowa, ATF 116, to Venezuela in Feb. 1962, Potawatomi, ATF 109, to Chile in 1963, Bannock ATF 81, to Italy in 1953.



MOSOPELEA

1965, A. & J. Pavia



KIOWA

1966, A. & J. Pavia

ATA 240 (ex-U.S. Army LT 455)

534 tons standard (835 tons full load) 143 (o.a.) \times 33 $\frac{1}{8}\times$ 13 $\frac{6}{8}$ (max.) feet Diesel-electric. B.H.P.: 1,500=13 kts. Displacement: Dimensions: Machinery:

T-ATA 239 (ex-LT 532) was returned to U.S. Army. T-ATA 244 (ex-LT 156) was stricken on 1 Nov. 1959. T-ATA 241 (ex-LT 60), T-ATA 242 (ex-LT 132) and T-ATA 243 (ex-LT 646) were transferred to Maritime Administration in 1962.

Large Harbour Tugs (YTB) 20 "Edenshaw" Class

Displacement: Dimensions:

400~tons $108{\times}28~feet$ Diesel. S.H.P.: 1,800=14 kts. Controllable pitch pro-Machinery:

pellers

Built by Christy Corp., Sturgeon Bay, Wis. Steel hulled. Nos. YTB 752, 753, 756 to 773, YTB 752 (named Edenshaw) was completed in 1960. YTB 753 (named Marin) was launched on 22 Apr. 1960. YTB 756-759, Bogalusa, Puducah, Pontlac, and Oshkash completed in 1961, are of 356 tons and 103 feet (o.a.). Another YTB of 265 tons in the Fiscal Year 1960 programme, YTB 760, 761, 762 in 1961 Programme, 434 tons, 109×30 feet, cryw 12, YTB 763-766 in the 1962 Programme, YTB 767-773 in 1963 programme, 747-781 in 1964 programme, TDR 782-789 in 1965 program. Total in service 37 (YTB 287-781). The "Mascoutan" class, 205 tons, 85 ft. have two vertical axis controllable pitch propellers.

Medium Harbour Tugs (YTM)

There are 140 Medium Harbour Tugs, YMT 128-759, from 91 feet in length.

Small Harbour Tugs

There are 42 Small Harbour Tugs. 422-756, ranging from 66 to 83 feet.

SALVAGE TUG (ATS)

ATS 1

I New Construction

Prototype salvage tug in 1966 Shipbuilding Programme, To cost \$10,400,000.

List of classifications of naval vessels and service craft

Every vessel in the Navy List has a distinctive serial number, prefaced by letters denoting the category to which she belongs.

A list of these symbols, with their significance, as officially promulgated, follows:

In the following lists the arrangement within the major catagories and sub-categories is alphabetically by symbols.

Where the identifying classification and

hull number of a naval vessel or service vessel is preceded by the letter "E" it indicates that the particular vessels or craft is "Experimental." Similarly the prefix "T"

indicates that the vessel is assigned to MSTS (Military Sea Transportation Service).

The addition of the Suffix "N" to the identifying classification indicates that that particular vessel has nuclear propulsion.

List of Naval Vessel Classifications		(3) Mine Warfare Ships		Salvage Craft Tender	ARST
a. Combatant (1) Warships		Minelayer, Destroyer Mine Countermeasures Support Ship Minehunter, Auxiliary Minehunter, Coastal Minelayer, Fleet Minelayer, Auxiliary Minelayer, Coastal Minesweeper, Auxiliary Minesweeper, Coastal Minesweeper, Coastal Minesweeper, Fleet (steel hulled) Minesweeper, Ocean (Non-magnetic) Minesweeper, Special	DM MCS MHA MHC MMF MMA MMC MSA MSC MSC(O) MSF MSO MSS	Aircraft Repair Ship Aircraft Repair Ship (Aircraft) Aircraft Repair Ship (Engine) Aircraft Repair Ship (Engine) Aircraft Repair Ship (Helicopter) Submarine Tender Submarine Rescue Ship Auxiliary Ocean Tug Fleet Ocean Tug Salvage Tug Salvage Tug Seaplane Tender Advance Aviation Base Ship Guided Missile Ship Small Seaplane Tender Aviation Supply Ship Auxiliary Aircraft Transport Distilling Ship	ARV ARVA ARVE ARVH AS ASR ATA ATS AV AVB AVB AVS AVY
				Unclassified Miscellaneous	ĴX
Aircraft Carriers:					
		(4) Patrol Ships		(c) Service Craft	
Attack Aircraft Carrier Nuclear Power Aircraft Carrier ASW Support Aircraft Carrier	CVA CVAN CVS	Escort Ship Guided Missile Escort Ship Radar Picket Escort Ship Patrol Air Cushion Vehicle Submarine Chaser (173')	DE DEG DER PACV PC	Large Auxiliary Floating Dry Dock Small Auxiliary Floating Dry Dock Medium Auxiliary Floating Dry Dock Barracks Ship (non-self-propelled) Auxiliary Repair Dry Dock	AFDB AFDL AFDM APL ARD
Battleships:		Escort (180') Rescue Escort (180') Patrol Craft Coastal (Fast) Submarine Chaser (Hydrofoil)	PCE PCER PCF PCH	Medium Auxiliary Repair Dry Dock *Utility Landing Craft (see footnote) Mine Sweeping Boat Minesweeper, Inshore	ARDM LCU MSB MSI
Battleship	ВВ	Submarine Chaser (136') Patrol Escort Patrol Gunboat (Hydrofoil) Motor Gunboat Fast Patrol Boat	PCS PF PGH PGM PTF	Target and Training Submarine Submersible Craft Miscellanèous Auxiliary Open Lighter Car Float	YAG YC YC
Cruisers:		Submarine Chaser (110')	SC	Aircraft Transportation Lighter	YCV
				Floating Crane Diving Tender	YDT
Heavy Cruiser Guided Missile Heavy Cruiser Guided Missile Cruiser Nuclear Power Guided Missile Cruiser Light Cruiser Anti-Aircraft Light Cruiser Guided Missile Light Cruiser	CA CAG CG CGN CL CLAA CLG	(5) Command Ships Command Ship b. Auxiliary Ships	сс	Covered Lighter (self-propelled) Ferryboat or Launch Yard Floating Dry Dock Covered Lighter (non-self-propelled) Large Covered Lighter Dry Dock Companion Craft Lighter (special purpose) Floating Power Barge Refrigerated Covered Lighter	YF YFD YFB YFN YFNB YFND YFNX YFP
Destroyers:		Destroyer Tender Degaussing Ship Ammunition Ship	AD ADG AE	(self-propelled) Refrigerated Covered Lighter (non-self- propelled) Covered Lighter (Range Tender)	YFRN YFRT
Destroyer Nuclear Power Destroyer Guided Missile Destroyer Radar Picket Destroyer Frigate Guided Missile Frigate Nuclear Power Guided Missile Frigate	DD DDN DDG DDR DL DLG DLGN	Store Ship Combat Store Ship Miscellaneous Icebreaker Escort Research Ship Hydrofoil Research Ship Flagship Missile Range Instrumentation Ship Major Communications Relay Ship	AF AFS AG AGB AGDE AGEH AGF AGM AGMR	Harbour Utility Craft Garbage Lighter (self-propelled) Garbage Lighter (non-self-propelled) Dredge Gate Craft Fuel Oil Barge (self-propelled) Gasoline Barge (self-propelled) Fuel Oil (non-self-propelled) Fuel Oil (non-self-propelled)	YFU YG YGN YM YNG YOG YOGN YOGN
Submarines:		Oceanographic Research Ship Radar Picket Ship Surveying Ship	AGOR AGR AGS	Oil Storage Barge Patrol Craft Floating Pile Driver	YOS YP YPD
Submarine Fleet Ballistic Missile Submarine Nuclear Power Fleet Ballistic Missile Submarine Guided Missile Submarine Nuclear Power Guided Missile Submarine Nuclear Power Submarine	SSBN SSBN SSG SSGN SSGN	Costal Surveying Ship Satellite Launching Ship Auxiliary Submarine Technical Research Ship Hospital Ship Cargo Ship Cargo Ship, Dock Light Cargo Ship Net Cargo Ship	AGSC AGSL AGSS AGTR AH AK AKD AKL AKN	Floating Workshop Repair and Berthing Barge Repair, Berthing and Messing Barge Repair, Berthing and Messing Barge (Large) Floating Dry Dock Workshop (Hull) Floating Dry Dock Workshop (Mach.) Radiological Repair Barge Seaplane Wreckage Derrick	YR YRB YRBM YRBML YRDH YRDM YRDM YRR
(2)Amphibious Warfare Ships		Stores Issue Ship Cargo Ship and Aircraft Ferry Net Laying Ship	AKS AKV AN	Sludge Removal Barge Large Harbour Tug Small Harbour Tug Medium Harbour Tug	YSR YTB YTL YTM
Amphibious Force Flagship Attack Cargo Ship Attack Transport High Speed Transport Transport Submarine	AGC AKA APA APD APSS	Oiler Fast Combat Support Ship Gasoline Tanker Replenishment Oiler Submarine Oiler Transport	AO AOE AOG AOR AOSS AP		YV YW YWN
Inshore Fire Support Ship Amphibious Transport Dock Amphibious Assault Ship Dock Landing Ship Medium Landing Ship	LPD LPH LSD LSM	Self-propelled Barracks Ship Small Coastal Transport Repair Ship Battle Damage Repair Ship Cable Reparing or Laying Ship	APB APC AR ARB ARC	Many of the above types are n longer in the U.S. Navy but are of loan to other countries anod therefor remain on the U.S. Navy list.	on
Medium Landing Ship (Rocket) Support Landing Ship (Large) Tank Landing Ship Vehicle Cargo Ship	LSMR LSSL LST LSV	Internal Combustion Engine Repair Sh Landing Craft Repair Ship Salvage Ship Salvage Lifting Ship	ARL ARS ARSD	*Note All LCUs., Utility Landing Craft, we reclassified from "Service Craft" ("Boats" is Nov. 1958	re to

Name	Maker	NITED S	STATES N Dimensions	IAVY CARRIE Power Plant	Armament	RCRAF1 Performance	
CRUSADER II F-8D and E	Ling Temco- Vought	Single-Seat Fighter	Wing Span 35'2" Folded 22'6" Length 54'5\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	One Pratt & Whitney J57 turbojet with after- burner		Max. speed 1,200 m.p.h. Range 500 miles	RF-8A is lower-powered photo. recon. version. RF-8A being converted to RF-8G.
F-III B (TFX)	General Dynamics Grumman	Two-Seat Fighter	Wing-Span 70' spread 33'11" swept Length 66'9"	Two Pratt & Whitney TF 30 turbofans with afterburners	Six Phoenix missiles or bombs, rockets, etc.		29 ordered for develop- ment and test
PHANTOM II F-4B F-4I	McDonnell	Two-Seat All weather Fighter	Wing Span 38'5" Folded 27'6½" Length 58'3"	Two General Electric J79 turbojets with afterburners		Max. speed 1,500 m.p.h. Range 1,800- 2,100 miles	Demons and early-model
SKYWARRIOR A-3B	Douglas	Attack Bomber	Wing Span 72'6" Length 76'4"	Two Pratt & Whitney J57 turbojets	and 12,000 lb. of	610 m.p.h. Range over	EA-3B is radar counter- measures version. RA-3B is photo, recon. version. TA-3B bombardier trainer
SKYHAWK A-4E	Douglas	Single-Seat Light Attack Bomber	Wing Span 27'5" Length 42'10\frac{3}{4}"	One Pratt & Whitney J52 turbojet	Two 20 mm, cannon 8,200 lb. torpedoes, missiles, rockets, bombs or nuclear weapons	680 m.p.h. Range over	A-4A, B and C are earlier versions with less-power- ful Wright J65 engine and smaller weapon load
VIGILANTE A-5A	North American	Two-Seat Attack Bomber	Wing Span 53' Length 73'2½"	Two General Electric J79 turbojets with afterburners			Weapons ejected from tunnel in tail. RA-5C more fuel and reconnaissance equipment. Most were built or converted to RA-5C standard
INTRUDER A-6A	Grumman	Two-Seat Attack Bomber	Wing Span 53' Folded 25'2" Length 54'7"	Two Pratt & Whitney J52 turbojets		720 m.p.h.	For high-subsonic attack at low levels in all we- athers, by day and night. Also EA-6A/B for BCM
CORSAIR II A-7A	Ling-Temes Vought	Single-Seat Light Attac Aircraft	Wing Span k 38'8 ³ / ₄ " Length 46'1 ¹ / ₂ "	One Pratt & Whitney TF30 turbofan	Two 20 mm. cannon, 20,000 lb. of bombs, missiles, etc.		Developed from F-8 Crusader
TRACKER S-2D S-2E	Grumman	Four-Seat Submarine Search and Attack	Wing Span 72'7" Folded 27'4" Length 43'6"	Two Wright R-T820- 82A engines	Homing torpedoes, atomic depth charges, rockets, etc.	at sea level,	S-2A and C are earlier versions with shorter span and length. TRACER E-1B is radar early warning version
HAWKEYE E-2A	Grumman	Five-Seat Early-Warn- ing Aircraft	Wing Span 80'7" Length 56'4" Radome 24'	Two Allison T56 turbo- props	None		Carries radar "Saucer" above fuselage
TRADER C-1A	Grumman	Transport	Wing Span 72'7" Length 43'6"	Two Wright R-1820- 82 engines	None		Development of Tracker for "carrier on board" delivery. Nine passengers.
GREYHOUND C-2A	Grumman	Transport	Wing Span 80'7" Length 56'6"	Two Allison T56 turbofans	None	Max. speed 330 m.p.h. Range 1,500 miles	Development of Hawkeye for "carrier on board" delivery
UH-43C	Kaman	Four or Five-Seat Helicopter		One Pratt & Whitney R-1340-48 radial en- gine	None	Max. speed 109 m.p.h. Range 220 miles	OH-43D similar
SEASPRITE UH-2A and B	Kaman	Multi-Seat Helicopter		One General Electric T58 shaft-turbine	None	162 m.p.h.	For transport (11 passengers), rescue and ambulance duties.
SEABAT SH-34J	Sikorsky	Anti- Submarine Helicopter		One Wright R-1820-84 radial air-cooled engine	Homing torpedo	Max. speed 123 m.p.h. Range 248 miles	Also Marine UH-34D Seahorse Utility version
SEA KING SH-3A SH-3D	Sikorsky	Four-Seat Anti- Submarine Helicopter		Two General Electric T58 shaft-turbine engines	840 lb. of Homing torpedoes and rockets	Max. speed 160 m.p.h. Range 540 miles	Amphibious. First U.S.N. anti-submarine hunter-
SEA KNIGHT CH-46A CH-46D	Vertol (Boeing)	Assault Transport Helicopter		Two General Electric T58 shaft-turbine engines	None	186 m.p.h.	For Marines. Crew of 3, 25 troops or 6,300 lb. cargo. UH-46A ship replenishment helicopter similar
SEA STALLION CH-53A	Sikorsky	Assault Helicopter	Rotor Dia. 72' Fuselage Length 67'2"	Two General Electric T 64 shaft - turbine engines	None		Marine Corps. 38 troops or 8,000 lbs. cargo.

UNITED STATES NAVY GUIDED MISSILES

Category	Name	Maker	Overal Length Ft.	•	Speed Mach.	Range Miles	Guidance System	Notes
AIR TO AIR	SPARROW IIIB AIM-7E	Raytheon	12	Rocketdyne Solid propellent	2+	. 8	Semi-active homing	Arms Phantom II fighter. Also Sea Sparrow ship-to-air version
	SIDEWINDER TA AIM-9B	Philco and General Electric	9.2	Naval Powder Plant Solid propellent	2.5	2.1	Infra-red-homing	
	SIDEWINDER 1C (AIM-9D)	Raytheon	9.4	Solid propellent			Infra-red-homing	
AIR TO SURFACE	BULLPUP AGM-12B	Martin and Maxson	l 10·5	Thiokol liquid pro- pellent (storable)	1.8	7	Command	Built around standard 250 lb. bomb and other war- heads. Improved AGM-12C also in production
	SHRIKE AGM-45A	Texas Instrumen Sperry	ts/	Rocketdyne Solid propellent		approx 10	Passive Radar homing	Anti-Radar missile.
	CONDOR	N. Am. Av	.Co.				TV from A-6A	
	WALLEYE	Martin	11.25	None (glide bomb)			TV from launch Aircraft	Built around 1,000 lb. bomb.
SURFACE TO AIR	TALOS RIM-8D and E	Bendix	31-3	Bendix ramjet. Solid propellent booster	2.5	65 slant	Beam riding cruise phase. Semi-active homing	Carried by cruisers. High explosive or nuclear warhead.
	(SUCCESSOR TO TERRIER-TARTAR STANDARD MISSILE RIM—66A/67A	General) Dynamics	approx. 15	Solid propellent		10+ 30+		Tartar replacement 10 nautical miles, Terrier replacement with booster dropped after launch, 30 nautical miles range. 12 in. dia.
	ADVANCED TERRIER RIM-2	General Dynamics	27	Allegany Ballistics Solid propellent Solid propellent booster.	3.0	20 slant	Homing all the way	Carried by frigates and smaller warships, as well as large ships.
	TARTAR (Improved) RIM-24B	General Dynamics	15	Aerojet General Solid propellent	2.2	over 10 slant	Radar	Carried by destroyers and as secondary armament in cruisers.
SURFACE TO SURFACE	POLARIS A1 UGM-27A A-2 UGM-27B A-3 UGM-27C	Lockheed Lockheed Lockheed	31	Aerojet-General or Hercules Powder Solid propellent	10 10 10	1,380 1,725 2,875	inertial (M.I.T. design) (Manuf. G.E. & Hughes Aircraft	Bombardment weapon of Fleet Ballistic Missile System, in "Lafayette", "Ethan Allen" and "George Washington" class nuclear powered submarines, each carrying 16 missiles and capable of submerged launch.
	POSEIDON B-3	Lockheed	34	Hercules Powder and Thiokol Solid propellent		2,900	Same as Polaris	Twice destructive power and accuracy of A-3. Available 1970.
				ANTI-SUBMARINI	E WEA	PONS		
WEAPON A ALFA RUR-4A	12:75 in. anti-submeld of fire.	narine rock	et weigh	iting 500 lbs., fired	at a de	etected sub	marine from a launc	her with an almost circular
(Anti- h	allistic ASW rocket oming torpedo or pprox. 1,000 lb.	developed nuclear de	by Honoth char	eywell, operational ge, which enters w	since i	961. Paylo ter aerial tr	oad can be either a (a)	Gen. Elect. Mk. 44 acoustic- target. Length 15 ft. Weight
(Submarine su Rocket) a	arfaced or from sub erial trajectory of 3	merged sub 0 to 50 mi	marines, les to ti	emerges from the v he vicinity of the ta	water a	nd is guid dive on e	ed by self-containing nemy submarines. Ha	t. in length, launched from inertial guidance system in s range considerably greater s of "Thresher" class.
ASTOR A	wire-guided rocker eliability and accura	t-boosted a cy. Capable	nti-subm of desi	arine torpedo with troying deep-diving,	nuclear high sp	warhead, eed submar	in production by Weines. Weight over 2,0	estinghouse. Extremely high 00 lb. Range about 11 miles.
DASH D QH-50C af	rone anti-submarine ter being positione	helicopter d over targ	for us	se by destroyers. Herational in many de	elicopte estroyer	er carries tv	vo ASW torpedoes rel	eased remotely by destroyer

The Norwegian designed ASW missile system TERNE 3 in escorts Charles Berry and McMorris was removed in 1964, and "Terne" is no longer in the U.S. Navy.

UNITED STATES NAVY SERIAL NUMBERS

CVAN—Nuclear Powered Attack Aircraft Carrier	AGMR—Major Communications Relay Ships	DLGN—Nuclear Powered Guided Missile	DD—Destroyers—continued
		Destroyer Leaders	440 Ericsson
65 Enterprise	1 Annapolis (ex-Gilbert Islands, AKV 39, ex-CVE 107)	(Frigates)	441 Wilkes 443 Swanson
	2 Arlington (ex-Saipan, ex-CC 3.	25 Bainbridge 35 Truxtun	445 Fletcher
	ex-AVT 6, ex-CVL 48)		446 Radford 447 Jenkins
			448 La Vallette
CVA—Attack Aircraft Carriers		DLG—Guided Missile	449 Nicholas 450 O'Bannon
14 Ticondedoga	BB—Battleships	Destroyers Leaders Frigates)	455 Hambledon
19 Hancock		6 Farragut	462 Fitch 465 Sauffey
31 Bon Homme Richard 34 Oriskany	61 łowa 62 New Jersey	7 Luce	466 Waller
38 Shangri-La	63 Missouri 64 Wisconsin	8 Macdonough 9 Coontz	468 Taylor 470 Bache
41 Midway 42 Franklin D. Roosevelt	64 WISCONSIN	10 King	471 Beale
43 Coral Sea		11 Mahan 12 Dahlgren	475 Hudson 478 Stanley
59 Forrestal 60 Saratoga		13 William V. Pratt	479 Stevens
61 Ranger	CC—Command Ships	14 Dewey 15 Preble	480 Halford 489 Mervine
62 Independence 63 Kitty Hawk	1 Northampton (ex-CLC 1, ex-CA 125)	16 Leahy	490 Quick
64 Constellation	2 Wright (ex-AVT 7,	17 Harry E. Yarnell 18 Worden	491 Farenholt 492 Bailey
66 America 67 John F. Kennedy	ex-CVL 49)	19 Dale	493 Carmick
or join 1. Remiedy		20 Richmond K. Turner 21 Gridley	494 Doyle 495 Endicott
	CGN—Nuclear Powered	22 England	496 McCook
	Guided Missile Cruiser	23 Halsey 24 Reeves	497 Frankford 498 Philip
CVS—Support Aircraft	9 Long Beach	26 Belknap	499 Renshaw
Carriers	-	27 Josephus Daniels 28 Wainwright	501 Schroeder 502 Sigsbee
9 Essex		29 Jouett	507 Conway
10 Yorktown 11 Intrepid		30 Horne 31 Sterett	508 Cony 510 Eaton
12 Hornet	CG—Guided Missile Cruisers	32 William H. Standley	511 Foote
15 Randolph 16 Lexington	10 Albany 11 Chicago	33 Fox 34 Biddle	513 Terry 517 Walker
18 Wasp	11 Chicago 12 Columbus	37 Diddig	519 Daly
20 Bennington 33 Kearsarge			521 Kimberly 528 Mullany
36 Antietam			530 Trathen
39 Lake Champlain	CAG—Guided Missile		531 Hazelwood 534 McCord
	Heavy Cruisers	DL-Destroyer Leaders	535 Miller
	1 Boston 2 Canberra	(Frigates)	536 Owen 537 Sullivans
1 DLI Amphibiana Assault		1 Norfolk (ex-CLK 1) 2 Mitscher (ex-DD 927)	538 Sttphen Potter
LPH—Amphibious Assault Ships		3 John S. McCain (ex-	540 Twining 541 Yarnall
2 Iwo Jima		DD 928) 4 Willis A. Lee (ex-DD 929)	544 Boyd
3 Okinawa	CLG—Guided Missile Light Cruisers	5 Wilkinson (ex-DD 930)	547 Cowell 553 John D. Henley
4 Boxer (ex-CVS 21) 5 Princeton (ex-CVS 37)		•	554 Franks
7 Guadalcanal	3 Galveston 4 Little Rock		558 Laws 561 Pritchett
8 Valley Forge (ex-CVS 45) 9 Guam	5 Oklahoma City 6 Providence		562 Robinson
10 Tripoli	7 Springfield		563 Ross 564 Rowe
11 New Orleans	8 Topeka	DDG—Guided Missile	566 Stoddard
		Destroyers	567 Watts 568 Wren
		2 Charles F. Adams (ex- DDG 952)	573 Harrison
AVT—Auxiliary Aircraft		3 John King (ex-DDG 953) 4 Lawrence (ex-DDG 954)	574 John Rodgers 575 McKee
Transports	CA—Heavy Cruisers	5 Claude V. Ricketts (ex-	577 Sproston 578 Wickes
2 Monterey (ex-CVL 26)	68 Baltimore	Biddle) (ex-DDG 955) 6 Barney (ex-DDG 956)	580 Young
5 San Jacinto (ex-CVL 30)	71 Quincy 72 Pittsburgh	7 Henry B. Wilson (ex-	585 Haraden 587 Beli
8 Franklin (ex-CVS 13) 9 Bunker Hill (ex-CVS 17)	73 St. Paul	DDG 957) 8 Lynde McCormick (ex-	588 Burns
10 Leyte (ex-CV\$ 32)	75 Helena 122 Oregon City	DDG 958)	589 Izard 590 Paul Hamilton
11 Philippine Sea (ex-CVS 47) 12 Tarawa (ex-CVS 40)	124 Rochester	9 Towers 10 Sampson	594 Hart
12 121212 (01 010 10)	130 Bremerton 131 Fall River	11 Sellers	595 Metcalfe
	132 Macon	12 Robinson 13 Hoel	596 Shields 597 Wiley
	133 Toledo 134 Des Moines	14 Buchanan	598 Bancroft
	135 Los Angeles	15 Berkeley 16 Joseph Strauss	600 Boyle 601 Champlin
AKV—Aircraft Ferry and	139 Salem 148 Newport News	17 Conygham	602 Meade
Cargo Ships	. to compete come	18 Semmes 19 Tattnall	603 Murphy 604 Parker
8 Kula Gulf (ex-CVE 108)		20 Goldsborough	606 Coghlan 607 Frazier
9 Cape Gloucester (ex- CVHE 109)		21 Cochrane 22 Benjamin Stoddert	608 Gansevoort
11 Vella Gulf (ex-CVHE 111)	CL—Light Cruisers	23 Richard E. Byrd	609 Gillespie 610 Hobby
12 Siboney (ex-CVE 112) 14 Rendova (ex-CVE 114)	65 Pasadena 90 Astoria	24 Waddell	611 Kalk
16 Badoeing Strait (ex-	101 Amsterdam		613 Laub 614 Mackenzie
CVE 116) 17 Saidor (ex-CVHE 117)	102 Portsmouth 103 Wilkes Barre		615 McLanahan
19 Point Cruz (ex-CVE 119)	103 Wilkes Barre 104 Atlanta (1X 304)		616 Nields 617 Ordronaux
21 Rabaul (ex-CVHE 121) 23 Tinian (ex-CVHE 123)	106 Fargo	DDDestroyers	618 Davison
37 Commencement Bay (ex-	144 Worcester 145 Roanoke		619 Edwards 621 leffers
CVHE 105) 40 Card (ex-CVU 11,		422 Mayo	. 623 Nelson
ex-CVHE 11)		423 Gleaves	626 Satterlee 627 Thompson
41 Core (ex-CVU 13, ex-CVHE 13)		424 Niblack 425 Madison	628 Welles
42 Breton (ex-CVÚ 23,	CLAA—Anti-Aircraft Light Cruisers	428 Crarles F. Hughes	629 Abbott 630 Braine
ex-CVHE 23) 43 Croatan (ex-CVU 25,	98 Tucson	432 Kearny 435 Grayson	632 Cowie
			633 Knight

U.S.N. Serial Numbers-contd.

—De	stroyers—continued	DDD	estroyers—continued	DEGG	iuided Missile Escort Ships	DD—Es	cort Ships—continued
634	Doran 780 Stormes			Brooke	341	Raymond	
635	Earle	781	Robert K. Huntington		Ramsey	342	Richard A. Suesen
637	Gerhardi	782	Rowan		Schofield	343	Abercrombie
638	Herndon	783 784	Gurke McKean		Talbot Richard I Page	345 346	Robert Brazier Edwin A. Howard
641 643	Tillman Sigourney	784 785	McKean Henderson		Richard L. Page Julius A. Furer	346	lesse Rutherford
645	Stevenson	786	Richard B. Anderson	1 °	Julius A. Furer	348	Key
646	Stockton	787	James K. Kyes	1		349	Gentry
647	Thorn	788	Hollister	1		350	Traw
649	Albert W Grant	789	Eversole			353	Doyle C. Barnes
650	Caperton	790 793	Shelton Cassin Young	1		354 355	Kenneth M. Wille laccard
651 652	Cogswell Ingersoll	794	Irwin	1		356	Lioyd E. Acree
653	Knapp	795	Preston	1		357	George E. Davis
654	Bears	800	Porter			358	Mack
658	Colahan	805	Chevalier			360	Johnnie Hutchins
659	Dashiell	806	Higbee	1		361	Walton
660	Bullard	807	Benner			362	Rolf
661 662	Kidd Bennion	808 817	Dennis J. Buckley Corry			363 364	Pratt Rombach
665	Bryant	818	New			365	McGinty
666	Black	819	Holder	DEEs	cort Ships	366	Alvin C. Cockrell
667	Chauncey	820	Rich			367	French
669	Cotton	821	Johnston	51	Buckley	368	Cecil J. Doyle
671	Gatling	822	Robert H. McCard	129	Edsall	369	Thaddeus Parker
672	Healy	823	Samuel B. Roberts	130	Jacob Jones	370	John L. Williamso
674 675	Hunt Lewis Hancock	824 825	Basilone Carpenter	131	Hammann Robert E Permi	371 372	Presley Williams
676	Marshall	825	Agerholm	132	Robert E. Peary Pope	382	Ramsden/DER
679	McNair	827	Robert A. Owens	137	Herbert C. Jones	383	Mills/DER
LEO	Malvin	829	Myles C. Fox	138	Douglas L. Howard	384	Rhodes/DER
681	Hopewell	830	Everett F. Larson	139	Farquhar	385	Richey
682	Porterfield	831	Goodrich/DDR	140	J.R.Y. Blakeley	386	Savage/DER
683 684	Stockham Wedderburn	832 833	Hanson	141	Hill	387 388	Vance/DER Lansing/DER
685	Wedderburn Picking	833	Herbert J. Thomas Turner/DDR	142 145	Fessenden/DER Huse	389	Durant/DER
686	Halsey Powell	835	Charles P. Cecil	145	Inch	390	Calcaterra/DER
687	Uhlmann	836	Georges K. Mackenzie	147	Blair/DER	391	Chambers/DER
688	Remey	837	Sarsfield	149	Chatelain	392	Merrill
690	Norman Scott	838	Ernest G. Small/DDR	150	Neunzer	393	Haverfield/DER
691	Mertz	839	Power	151	Poole	394 395	Swenning Willis
692 693	Allen M. Sumner	840	Glennon	152	Peterson	396	Janssen
694	Moale Ingraham	841 842	Noa Fiske	153	Reuben James	397	Wilhoite/DER
696	English	843	Warrington	163	Levy McConnell	398	Cockrill
697	Charles S. Sperry	844	Perry	164	Osterhaus	399	Stockdale
698	Ault	845	Bausell	165	Parks	400	Hissem/DER
699	Waldron	846	Ozbourn	167	Acree	402	Richard S. Bull
700	Haynsworth	847	Robert L. Wilson	170	Booth	403 405	Richard M. Rowel Dennis
701 702	John W. Weeks	848	Witek	172	Cooner	406	Edmonds
703	Hank Wallace L. Lind	849 850	Richard E. Kraus Joseph P. Kennedy jr.	180	Trumpeter	409	La Prade
704	Borie	851	Rupertus	191	Straub Coffman	410	Jack Miller
705	Compton	852	Leonard F. Mason	198	Lovelace	411	Stafford
706	Gainard	853	Charles A. Roan	199	Manning	412	Walter C. Wann
707	Soley	857	Bristol	200	Neuendorf	414	Le Ray Wilson
708	Harlan R. Dickson	858	Fred T. Berry	201	James E. Craig	415	Lawrence C. Taylor Melvin R. Nawman
709	Hugh Purvis	859	Norris	202	Eichenberger	417	Oliver Mitchell
710 711	Gearing Eugene A. Greene	860 861	McCaffery Harwood	203	Thomason	418	Tabberer
	Gyatt (ex-DDG 1.	862		210	Otter		Robert F. Keller
	ex-DDG 712)		Steinaker		Coolbaugh Darby	420	Leland E. Thomas
713			Harold J. Ellison	219	J. Douglas Blackwood		Chester T. O'Brien
714			Charles R. Ware	220	Francis M. Robinson	423	
715	William M. Wood		Cone	224		424 438	
716 717		867	Stribling Brownson	225		439	Conklin
	Hammer		Arnold J. Isbell	231	Hodges	441	
719			Fechteler	238 239		443	Kendall C. Campb
722	Barton	871	Damato	240		444	Goss
723	Walke	872	Forrest Royal	241		445	Grady
	Laffey	873		242	Tomich	446 447	
725 72 7	O'Brien	874		243	J. Richard Ward	447	Cross
	De Haven Mansfiield		Henry W. Tucker Rogers	244	Otterstetter/DER	449	Hanna
729		877		245	Sloat Snowden	450	Joseph E. Connolly
	Collett		Vesole	247		508	Gilligan
731		879	Leary	248		531	Edward H. Allen
732	Hyman	880	Dyess	249	Marchand	532	
734	Purdy		Bordelon	250	Hurst	533 534	
742			Furse	251		536	
743		883 884	Newman K. Perry Floyd B. Parks	252		537	
744 745	Blue Brush		John R. Craig	253 254		538	
	Taussig		Orleck	316			Wagner/DER
747	Samuel L. Moore	887	Brinkley Bass	317		540	Vandivier/DER
748	Harry E. Hubbard Alfred A. Cunningham		Stickell	318	Kirkapatrick/DER	577	Alexander J. Luke
752	Alfred A. Cunningham		O'Hare	320	Menges	578 579	Robert I. Paine
753 754	John R. Pierce	890 931	Meredith	321		580	
754 755	Frank E. Evans John A. Boje		Forrest Sherman John Paul Jones	332		581	NcNuity
756		933	Barry	323	Pride Falgout/DER	582	Metivier
757	Putnam	936	Decatur		Lowe/DER	584	Charles J. Kimmel
758	Strong	937	George F. Davis	326		586	Lough
759	Lofberg	938	Jonas Ingram	327	Brister/DER	587	
760			Maniey	328	Finch/DER	588	
761			Dupont	329		589 634	Tinsman Whitehurst
	Henley William C. Lawe	942	Bigelow Blandy		O'Reilly .	638	
	Lloyd Thomas		Blandy Mullinnix	331			Gendreau
765			Hull	332	Price/DER Strickland/DER	640	
770			Edson	333		641	William C. Cole
775	Willard Keith		Somers	335	Daniel	642	Paul G. Barker
776	James C. Owens	948	Morton	336	Roy O. Hale/DER	643	Damon M. Cummir
777			Parsons	337	Dale W. Peterson	644	
778		950	Richard S. Edwards		John C. Butler	00/	verseman

U.S.N. Serial Numbers—contd.

	ort Ships—continued	SSBN—Nuclear Powered Fleet Ballistic	SS—Submarines	SS—Submarines—continued
680	Loeser	Missile Submarines	214 Grouper AGSS (ex-SSK)	485 Sirago
681 683	Gillette Henry R. Kenyon	500 6 111 11	224 Cod AGSS 225 Cero AGSS	486 Pomodon 487 Remora
684	De Long	598 George Washington 599 Patrick Henry	228 Drum AGSS	489 Spinax (ex-SSR)
685	Coates	600 Treodore Roosevelt	236 Silversides AGSS	490 Volador
686	Eugene E. Elmore	601 Robert E. Lee	240 Angler AGSS (ex-SSK) 241 Bashaw AGSS (ex-SSK)	522 Amberjack 523 Grampus
696 697	Spangler George	602 Abraham Lincoln	241 Bashaw AGSS (ex-SSK) 242 Bluegill (ex-SSK)	524 Pickerel
698	Raby	608 Ethan Allen 609 Sam Houston	243 Bream AGSS (ex-SSK)	525 Grenadier
699	Marsh	610 Thomas A. Edison	244 Cavalla AGSS (ex-SSK)	555 Dolphin AGSS
700 701	Currier Osmus	611 John Marshall	245 Cobia AGSS 246 Croaker (ex-SSK)	563 Tang 564 Trigger
701	Earl V. Johnson	616 Lafayette	256 Hake AGSS	565 Wahoo
703	Holton	617 Alexander Hamilton 618 Thomas Jefferson	269 Rasher AGSS (ex-SSR)	566 Trout
704	Cronin	619 Andrew Jackson	270 Raton AGSS (ex-SSR)	567 Gudgeon 568 Harder
705 707	Frybarger Jobb	620 John Adams	272 Redfin AGSS (ex-SSR) 274 Rock AGSS (ex-SSR)	569 Albacore/AGSS
708	Parle	622 James Monroe 623 Nathan Hale	282 Tunny	572 Sailfish (ex-SSR)
742	Hibert	624 Woodrow Wilson	286 Billfish AGSS	573 Salmon (ex-SSR)
743 744	Lamons Kyne	625 Henry Clay	287 Bowfin AG/5 288 Cabrilla AGSS	574 Grayback APSS (ex-SSG) 576 Darter
745	Snyder	626 Daniel Webster 627 James Madison	291 Crevalle AGSS	577 Growler (SSG)
748	Tills	627 James Madison 628 Tecumseh	292 Devilfish AGSS	580 Barbel
749 750	Roberts McClelland	629 Daniel Boone	295 Hackleback AGSS 297 Ling AGSS	581 Blueback 582 Bonefish
765	Earl K. Olsen	630 John C. Calhoun	297 Ling AGSS 298 Lionfish AGSS	302 Bonelish
767	Oswald	631 Ulysses S. Grant 632 Von Steuben	299 Manta AGSS	
769	Neal A. Scott	633 Casmir Pulaski	300 Moray AGSS	
795 796	Gunason Major	634 Stonewall Jackson	301 Roncador AGSS 302 Sabalo	
797	Weeden	635 Sam Rayburn 636 Nathanael Greene	303 Sablefish	SST—Target Submarines
798	Varian	640 Benjamin Franklin	304 Seahorse	241 - 101 2-1 AMPHIMI 11422
800 1006	Jack W. Wilke Dealey	641 Simon Bolivar	310 Batfish 311 Archerfish AGSS	1 Mackerel
1014	Cromwell	642 Kamehameha 643 George Bancroft	313 Perch/APSS	2 Marlin 3 Barracuda (ex-SSK 1)
1015	Hammerberg	644 Lewis and Clark	315 Sealion/APSS	J Darracuda (6x-33K 1)
1021 1022	Courtney Lester	645 James K. Polk	318 Baya AGSS 319 Becuna	
1023	Evans	654 George C. Marshall	322 Blackfin	
1024	Bridget	655 Henry L. Stimson 656 George Washington Carver	323 Caiman	
1025	Bauer	657 Francis Scott Key	324 Blenny	DM—Destroyer Minelayers
1026 1027	Hopper John Willis	658 Mariano G. Vallejo	328 Charr 331 Bugara	
1028	van Voorhis	659 Will Rogers	334 Cabezon AGSS	23 Robert E. Smith
1029	Hartley		335 Dentuda AGSS	24 Thomas E. Fraser 25 Shannon
1030 1033	Joseph K. Taussig Claud Jones		337 Carbonero (ex-SSG) 338 Carp	26 Harry F. Bauer
1034	John P. Perry		339 Catfish	27 Adams
1035	Charles Berry	SSNNuclear Powered	340 Entemedor	28 Tolman 29 Henry A. Wiley
1036 1037	McMorris Bronstein	Attack Submarines	341 Chivo 342 Chopper	30 Shea
1038	McCloy	571 Nautilus	342 Chopper 343 Clagamore	32 Lindsey
1040	Garcia	575 Seawolf	344 Cobbler	33 Gwin
1041 1043	Bradley Edward McDonnell	578 Skate	346 Corporal	
1043	Brumby	579 Swordfish 583 Sargo	347 Cubera 348 Cusk (ex-SSG)	
1045	Davidson	584 Seadragon	349 Diodon	
1047 1048	Voge Sample	585 Skipjack	350 Dogfish	
1048	Koelsch	586 Triton (ex-SSRN) 587 Halibut (ex-SSGN)	351 Greenfish 352 Halfback	MMF—Fleet Minelayer
1050	Albert David	588 Scamp	362 Guavina/AGSS	,
1051	O'Callahan	589 Scorpion	365 Hardhead	5 Terror
1052 1053	Knox Roark	590 Sculpin 591 Shark	368 Jaliao 374 Loggerhead AGSS	
1054		592 Snook	377 Menhaden	
1055	Hepburn	594 Permit	382 Picuda	
1056 1057		595 Plunger 596 Barb	383 Pampanito AGSS 384 Parche AGSS	
1058	Mayercord	596 Barb 597 Tullibee	385 Bang AGSS	
1059		603 Pollack	387 Pintado AGSS	
1060 1061		604 Haddo	388 Pipefish AGSS 389 Piranha AGSS	
1062		605 Jack 606 Tinosa	391 Pomfret	MCS—Mine Countermeasures
1063		607 Dace	392 Sterlet	Support Ship
1064 1065		612 Guardfish	394 Razorback 295 Redfish AGSS	
1066		613 Flasher 614 Greenling	396 Ronquil	1 Catskill 2 Ozark
1067		615 Gato	398 Segundo	7 Epping Forest
1068 1069		621 Haddock	399 Seacat	
1079		637 Sturgeon 638 Whale	401 Seadog AGSS 402 Seafox	
1071		639 Tautog	403 Atule	
1072 1073		646 Grayling	405 Sea Owl	
1074		647 Pogy 648 Aspro	406 Sea Poacher 407 Sea Robin	
1075		649 Sunfish	408 Sennet	
1076		650 Pargo	409 Piper	
1077 1078		651 Queenfish 652 Puffer	410 Threadfin 411 Spadefish AGSS	MSO—Ocean Minesweepers
1079		653 Ray	412 Trepang AGSS	421 Agile
1080		660 Sand Lance	416 Tiru	423 Avenge
1081		661 Lapon	417 Tench 418 Thornback	422 Aggressor 424 Bold
1082		662 Gurnard 663 Hammerhead	418 Inornback 419 Tigrone (ex-SSR) AGSS	425 Bulwark
1084		664 Sea Devil	420 Tirante	426 Conflict
1085		665 Guitarro	421 Trutta	427 Constant
1086 1087		666 Hawkbill 667 Bergall	423 Torsk 424 Quillback	428 Dash 429 Detector
1088		668	425 Trumpetfish	430 Direct
1089		669	426 Tusk	431 Dominant
1090		670 671 Naryhal	475 Argonaut 476 Runner	432 Dynamic 433 Elusive
1091 1092		671 Narwhal	476 Runner 478 Cutlass	434 Embattle
		673	480 Medregal	435 Endurance
1093				436 Energy
1094		674	481 Requin (ex-SSR)	
		674 675 676	481 Requin (ex-55R) 482 Irex 483 Sea Leopard	437 Enhance 438 Esteem

U.S.N. Serial Numbers-contd.

MSO—Ocean Minesweepers —continued	MSF—Fleet Minesweepers —continued	AVM—Guided Missile Ship	370 Casco 371 Mackinac
440 Exploit 441 Exultant 442 Fearless 443 Fidelity 444 Firm 445 Force 446 Fortify 447 Guide 448 Iljusive 449 Impervious 455 Implicit 456 Inflict 457 Loyalty 458 Lucid 459 Notable 460 Notable 461 Observer 462 Pinnacle	318 Devastator 319 Gladiator 320 Impeccable 322 Spear 324 Vigilance 340 Ardent 341 Dextrous 362 Gadwai 364 Graylag 373 Peregrine (AG 176) 374 Pigeon 375 Pochard 377 Quail 379 Roselle 381 Scoter 384 Sprig 386 Tercel 390 Wheatear	AV—Seaplane Tenders 7 Currituck 10 Crandeleur 12 Pine Island 13 Salisbury Sound	372 Humboldt 373 Matagorda 374 Absecon 375 Chincoteague 376 Coos Bay 377 Rockaway 378 Half Moon 379 Unimac 380 Yakutat 381 Barataria 382 Bering Strait 383 Castle Rock 384 Cook Inlet 385 Dexter 386 McCulloch 387 Gresham
463 Pivot 464 Pluck 466 Prime 467 Reaper 468 Rival 469 Sagacity 470 Salute 471 Skill 472 Valour 473 Vigor 474 Vital 488 Conquest 489 Gallant	MHC—Coastal Minehunters 43 Bittern	PCE—Escorts 856 Whitehall 877 Havre 880 Ely 902 Portage	715 Hamilton 716 Dallas 717 Mellon 718 Chase 719 Boutwell 720 Sherman 721 Gallatin
490 Leader 491 Persistant 492 Pledge 494 Sturdy 495 Sweave 496 Venture 508 Acme 509 Adroit 510 Advance	MSC—Coastal Minesweepers	849 Somersworth 850 Fairview 851 Rockville 853 Amherst 855 Rexburg 857 Marysville	WMECMedium Endurance
511 Affray 519 Ability 520 Alacrity 521 Assurance MSF—Fleet Minesweepers 55 Raven 58 Broadbill 60 Nuthatch	122 Cormorant 190 Falcon 191 Frigate bird 192 Humming Bird 193 Jacana 194 Kingbird 195 Limpkin 196 Meadow Lark 197 Parrot 198 Peacock 199 Phoebe 201 Shrike 203 Thrasher 204 Thrush 205 Vireo 206 Warbler 207 Whippoorwill 208 Widgeon 209 Woodpecker	PCS—Wooden Submarine Chasers 1385 Hollidaysburg 1387 Beaufort AGC—Amphibious Force	Cutters 615 Reliance 616 Diligence 617 Vigilant 618 Active 619 Confidence 620 Resolute 621 Valiant 622 Courageous 623 Steadfast 624 Dauntless 625 Venturous 626 Dependable 627 Vigorous 627 Vigorous 628 Durable 629 Decisive 630 Alert
61 Pheasant 64 Starling 100 Heed 101 Herald 102 Motive 103 Oracle 104 Pilot 105 Pioneer 110 Revenge 111 Sage 114 Staff 116 Speed 118 Steady 120 Sway	289 Albatross 290 Gannet MSC(O)—Old Coastal Minesweepers	Flagships 7 Mount McKinley 11 Eldorado 12 Estes 16 Pocono 17 Taconic	101 Ariadne 103 Aurora 116 Triton 126 Agassiz 127 Alert 131 Cahoone 132 Cartigan 137 Ewing 140 General Green 143 Kimball 144 Legare 146 McLane 147 Morris 156 Yeaton
122 Swift 123 Symbol 124 Threat 126 Token 127 Tumult 128 Velocity 131 Zeal 165 Counsel 215 Cruise 240 Hazard 280 Prowess 304 Scurry 306 Spectre 307 Staunch 308 Strategy	24 Linnet 33 Plover 47 Fulmar 49 Lorikeet 51 Reedbird 54 Ruff 56 Turkey 58 Siskin	WHEC—High Endurance Cutters 31 Bibb 32 Campbell 33 Duane 35 Ingham 36 Spencer 37 Taney 39 Owasco 40 Winnebago 41 Chautauqua 42 Sebago 44 Wachusett 64 Escanaba	
309 Strength 311 Superior 314 Champion 315 Chief 316 Competent 317 Defense	ARVH—Aircraft Repair Ship (Helicopter) 1 Corpus Christi Bay (ex- Albemarle, AV 5)	65 Winona 66 Klamath 67 Minnetonka 68 Androscoggin 69 Mendota 70 Pontchartrain	

UNITED STATES COAST GUARD

Administration

Commandant, United States Coast Guard: Admiral Willard J. Smith. Assistant Commandant, U.S.C.G.: Vice-Admiral Paul E. Trimble. Chief of Staff of the Coast Guard: Rear-Admiral Mark A. Whalen. Superintentent of U.S. C.G. Academy: Rear Admiral Chester R. Bender.

Personnel

1964	Fiscal	Year:	Authorised	Strength:	31,959	officers	and	men.
1965	Fiscal	Year:	Authorised	Strength:	31,798	officers	and	men.
1966	Fiscal	Year:	Authorised	Strength:	32,519	officers	and	men.
1967	Fiscal	Year:	Authorised	Strength:	34.546	officers	and	men.

I.—ESTABLISHMENT

The United States Coast Guard was established by the Act of Congress approved January 28, 1915, which consolidated the Revenue Cutter Service founded in 1790 and the Life Saving Service founded in 1878.

The act of establishment as amended provides (Title 14, U.S. Code, Part 1, Sect. 1) "The Coast Guard as established January 28, 1915, shall be a military service and a branch of the armed forces of the United States at all times. The Coast Guard shall be a service in the Treasury Department, except when operating as a service in the Navy.

The Lighthouse Service, founded in 1789, was transferred to the Coast Guard on July 1, 1939, as a result of the President's Reorganization Plan No. 11.

On February 28, 1942, the President transferred temporarily from On February 28, 1942, the President transferred temporarily from the Secretary of Commerce to the Treasury Department certain safety-at-sea functions of the former Bureau of Marine Inspection and Navigation. These duties were delegated to the Coast Guard. The President's Reorganization Plan III, which became effective July 16, 1946 made this temporary transfer of functions permanent.

II.—DUTIES

- 1. The peacetime duties of the Coast Guard have as their principal objective safety and security at sea through enforcement of the navigation laws, saving life and assistance to vessels in distress, maintenance of aids to navigation, marine inspection, and oceanography.
- 2. Law enforcement duties, performed for all departments of the government, include those relating to customs, movements and anchorage of vessels, immigration, quarantine, neutrality, navigation and other laws governing merchant vessels and motor boats, safety of life on navigable waters during regattas, oil pollution, sponge fisheries, protection of game, seal and fisheries in Alaska, protection of bird reservations established by Executive Order and suppression of mutinies.
- 3. Life saving and assistance duties include maintenance of coastal stations and communication lines on the continental coasts of the United States, conduct of the International Ice Patrol, icebreaking, weather patrol, derelict destruction, winter cruising on the Atlantic coast, extension of medical aid to fishing vessels, Alaska Patrol and flood relief work. In its humanitarian duties the Coast Guard renders aid and assistance to vessels and aircraft in distress irrespective of nationality and extends its protection, if needed, to all shipping within the scope of its operations.
- 4. The Coast Guard maintains more than 42,000 navigation aids, consisting of lighthouses, lightships, off-shore light structures, radio beacons, buoys, radar beacons, world-wide loran, and unlighted beacons on the sea and lake coasts of the United States, on the rivers of the United States, and on the coasts of all other territory under United States jurisdiction, with the exception of Panama.

DUTIES—continued

5. In time of national emergency or when the President so directs the Coast Guard operates as a part of the Navy.

A military organization was adopted at the time the service was established in 1790, after the dissolution of the Revolutionary Navy. This organization has been continued since that date for the purpose of maintaining the general efficiency of the operation of the service in its law enforcement duties in time of peace.

The executive direction under which the Coast Guard operates as a part of the Navy in time of war is similar in effect to a measure of mobilization. In this respect the Coast Guard is a potential reserve force for the Navy.

No personnel are normally assigned or equipped as land troops. Vessels are prepared in emergencies to equipped as land troops. Vessels are prepared in emergencies to equip landing forces with small arms and machine guns; stations are similarly prepared to undertake emergency police duties in a more limited sense, because of the smaller units involved but in both cases these duties would be incidental to the primary purpose of the service, the enforcement of law on the high seas and navigable waters of the United States and the saving of life and property.

III.—ORGANIZATION

For the administration and operation of the Coast Guard, the United States, including its territories and insular possessions and the waters adjacent thereto are divided into 12 districts. These are grouped into two area commands. The EASTERN AREA includes the Atlantic and Gulf Coasts. The WESTERN AREA includes the Pacific. Heading the Coast Guard is the Commandant in Washington,

IV.—PERSONNEL

Uniforms of officers and men are similar to those of U.S. Navy, but commissioned officers wear a gold shield on the sleeve instead of a star, and cap device is a gold spread-eagle, the talons grasping a horizontal foul anchor. A silver shield is mounted on the eagle's breast. Enlisted men and women of the Coast Guard wear a shield on the lower right sleeve.

V.—VESSELS

Coast Guard vessels are designated Coast Guard cutters. Those of 110 feet tug type and below are detailed to the larger maritime ports to enforce Customs and Navigation laws and the regulation of the anchorage and movement of vessels.

VI.-AVIATION

Major air stations in commission number eleven. Location: Salem, Mass.; Brooklyn, N.Y.; Miami, Fla.; St. Petersburg, Fla.; San Diego, California; Port Angeles, Washington; Elizabeth City, N.C.; San Francisco, California; Traverse City, Michigan; Barbers Point, Oahu, Hawaii; Annette, Alaska.

There are also 14 small stations in the continental U.S., Bermuda, Puerto Rico, Hawaii, Alaska, Guam, Philippines and Italy.

HIGH ENDURANCE CUTTERS (WHEC)

7 + I New Construction. 378 Class

	No.	Launched
BOUTWELL	WHEC 719	_
CHASE	WHEC 718	-
DALLAS	WHEC 716	_
GALLATIN	WHEC 721	_
HAMILTON	WHEC 715	18 Dec. 1965
MELLON	WHEC 717	_
SHERMAN	WHEC 720	_
	WHEC 722	

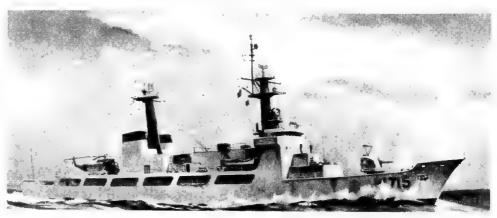
Displacement: 2,716 tons standard (3,050 tons full load) 350 (w.l.) 378 (o.a.)×42×20 Dimensions: feet 1—5 inch, 38 cal.
2—HH 52A helicopter
2 Fairbanks-Morse diesels plus
2 Pratt & Whitney gas turbines.
2 shafts, Total S.H.P.: 36,000 Guns: Machinery: = 29 kts. 11,500 miles at 20 kts., cruising range: 3,000 miles at 25 kts. with was turbines cut in Quarters for 17 officers, 152 men, plus 6 oceanographers Radius: Complement:

General

Hamilton is the prototype high endurance cutter of the planned new construction programme. Helicopter deck aft, Supplies for 40 days at sea. Creeping engine for a speed of approximately three knots for station

for a speed of approximately three knots for station keeping.

All built by Avondale Shipyards Inc. at a cost of \$10,151,000 each, Hamilton is scheduled to be completed in Sep. 1966, and Dallas in Nov. 1967. Two controllable pitch propellers, 13 ft. dia. Bow thruster propeller. Engine control and propeller pitch control console on navigation bridge, either bridge wing station or the engine room control booth. Boutwell,



HAMILTON

1966, United States Coast Guard, Official

Chase and Mellon are being built under the Fiscal Year

Designations changed from WPG to WHEC, effective

Designations changed from WPG to WHEC, effective 1 May 1966.
This is the latest artist's conception of the diesel-gas turbine powered high endurance cutter which the U.S. Coast Guard started building in 1964 as part of its fleet modernisation programme. She is the longest Coast Guard cutter on record. The Coast Guard put 36,000 H.P. into propulsion machinery of half the weight used in the Service's present 6,000 H.P. vessels. Operating on diesel power alone, the new cutter has a cruising speed of 20 knots. On gas turbine power she clips the water at a top speed of 29 knots, Her design features a

helicopter flight deck, forward of which are twin exhaust stacks abreast the mainmast which holds radar antenna and other electronic gear. The new cutter is equipped with communications facilities of more modern and greater capacity than in use now, a large oceanographic laboratory, and modern instruments for gathering weather data. Her rescue equipment include gas turbine powered motor lifeboats. Long-range plans envisage for a construction programme which may include three to four new vessels a year until a fleet of thirty-four 378 class cutters have been acquired. An illustration of the former design with twin main "macks" or combined masts and stacks, appears in the 1963-64 to 1965-66 editions. helicopter flight deck, forward of which are twin ex-

6 "Campbell" (327) Class

2,216 tons standard (2,785 tons full load) 308 (w.l.), 327 (o.a.) \times 41 \times 15 feet Displacement: Dimensions: 1-5 inch, 38 cal., 2-40 mm.

AA. (See Gunney notes)

Hedgehog, K-guns

Westinghouse geared turkings Guns:

A/S weapons: Machinery: Westinghouse geared turbines. 2 shafts. S.H.P.: 6,200=20.5 kts. (19.8 kts. sea spead) 2 Babcock & Wilcox

572 tons 8,000 miles at 12.5 kts., 12,300 miles at 11 kts. Boilers: Oil fuel:

Radius:

Complement:

General
Rated as 327 ft. Cutters. Employed as ocean station
ships. All built by Philadelphia Navy Yard except Bibb by
Charleston Navy Yard and Spencer by New York Navy
Yard. Named after former Secretaries of the Treasury.
Designation changed from WPG to WHEC, effective
I May 1966. Second World War Loss:—Alexander
Hamilton, WPG 34.
Gunnerv

Gunnery
All this class originally mounted two 5-inch guns.
The 20 mm. AA, guns were removed in 1957. The 40 mm.
AA, guns are to be replaced by 50 cal. machine guns.

BIBB (ex-George M. Bibb) CAMPBELL (ex-George W. Campbell) DUANE (ex-William J. Duane) INGHAM (ex-Samuel D. Ingham) SPENCER (ex-John C. Spencer) TANEY (ex-Roger B. Taney)	WHEC 31 WHEC 32 WHEC 33 WHEC 35 WHEC 36 WHEC 37	Launched 14 Jan. 1937 3 June 1936 3 June 1936 3 June 1936 6 Jan. 1936 3 June 1936	Completed 19 Mar. 1937 22 Oct. 1936 16 Oct. 1936 6 Nov. 1936 13 May 1937 19 Dec. 1936
TARET (ex-Roger B. Toney)	WHEC 37	3 June 1936	19 Dec. 1936



1965, United States Coast Guard, Official

Photographs A port bow oblique aerial view of Taney appears in the 1956-57 to 1960-61 editions, and a port broadside

view of Campbell before alternation in the 1961-62 to 1964-65 editions.

12 "Owasco" (255) Class

Displacement: 1,563 tons standard (1,913 tons 1,563 tons standard (1,915 tons full load)
254 (o.a.)×43×17 feet
1—5 inch, 38 cal., 4—40 mm.
AA. (see Gunnery notes)
Hedgehog, K-guns (see AntiSubmarine notes)
Westinghouse geared turbines.
Electrict drive. S.H.P.: 4,000=
18-4 kets. Dimensions: A/S weapons: Machinery: Boilers:

Oil fuel: Radius: 350 tons

14,800 miles at 11 kts. 140 Complement:

Rated as 255 ft. Cutters. Employed as ocean station ships. All built by Western Pipe & Steel Co., except Mendota and Pontchartrain, by Coast Guard Shipyard. Named after Indian tribes.

Designation changed from WPG to WHEC, effective May 1966.

Designation changed from versity and 1966.

Gunnery
The 20 mm, AA, guns and depth charge racks were removed in 1957. The 40 mm. AA, guns are to be replaced by 50 cal. machine guns.

Anti-Submarine
Anti-submarine weapons were re-installed in 1950.

Anti-submarine weapons were re-installed in 1950. Winona and others were in 1965 equipped with ASW rpedo launchers.

torpedo la Klamath, Klamath, Wachusett and Winnebago fitted with oceanographic research equipment.

A starboard broadside surface view of Sebago appears in the 1955-56 to 1960-61 editions, and a starboard broadside aerial view of Chautauqua in the 1961-62 to 1964-65 editions.

Launched Completed Completed 20 Sep. 1946 4 Aug. 1945 20 Mar. 1946 5 Sep. 1946 2 June 1946 20 Sep. 1946 18 May 1945 20 Sep. 1945 20 Sep. 1945 21 June 1945 ANDROSCOGGIN CHAUTAUQUA WHEC 68 WHEC 41 16 Sep. 1945 14 May 1944 25 Mar. 1945 2 Sep. 1945 WHEC 64 WHEC 66 ESCANABA KLAMATH MENDOTA (ex-Otsego) 25 Mar. 2 Sep. 29 Feb. 21 Nov. 18 June 29 Apr. 28 May 5 Nov. 2 July 22 Apr. WHEC 69 WHEC 67 1944 MINNETONKA (ex-Sunapee) 1945 1944 1944 WHEC 39 WHEC 70 OWASCO PONTCHARTRAIN (ex-Okeechobee) 70 WHEC 42 WHEC 44 SEBAGO (ex-Wachusett) WACHUSETT (ex-Huron) WINNEBAGO 1944 1944 1944 WHEC 44 WHEC 40 WHEC 65 1945 lune



WINNEBAGO

1965, United States Coast Guard, Official

Disposal Iroquols, WPG 43, of this class, which was decommissioned to reserve in 1955 and since then had been in storage, was disposed of im 1965.

High Endurance Cutters (WHEC)-contd.

ABSECON (ex-AVP 23)
BARATARIA (ex-AVP 33)
BERING STRAIT (ex-AVP 34)
CASCO (ex-AVP 12)
CASTLE ROCK (ex-AVP 35)
CHINCOTEAGUE (ex-AVP 24)
COOK INLET (ex-AVP 36)
COOS BAY (ex-AVP 25)
DEXTER (ex-Biscayne, AGC 18, ex-AVP 11)
GRESHAM (ex-Willoughby, ex-AGP 9, ex-AVP 57)
HALF MOON (ex-AVP 26)
HUMBOLDT (ex-AVP 21)
McCULLOCH (ex-Wachapreague, ex-AGP 8, ex-AVP 56)
MACKINAC (ex-AVP 13)
MATAGORDA (ex-AVP 22)
ROCKAWAY (ex-AVP 29)
UNIMAK (ex-AVP 31)
YAKUTAT (ex-AVP 32)
INDALLI / AV-1111 AWA

18 "Casco" (311) Class

Former Navy Seaplane Tenders

Displacement:	1,766 tons standard	(2,800 tons
Dimensions; Guns:	full load) 311 (o.a.)×41×14 1—5 inch, 38 cal.,	

AA. (see Gunnery)
Hedgehog, 4 K-guns
Diesel, B.H.P.; 6,080=19 kts.
(see General)
Maximum range of 22,000 miles A/S weapons: Machinery: Radius:

at economical speed of 11 kts. Range of 8,000 miles at maximum speed of 19 kts. 215

Complement:

Complement: 213
General
Rated as 311 ft. Cutters. All except Dexter, Gresham and McCulloch are AVPs on loan from the U.S. Navy.
Employed as ocean station ships. Dexter was refitted with four new Fairbanks-Morse diesels in 1957 and was recommissioned in July 1958 for duty as West Coast Training Ship. Unlmak is East Coast Training Ship.

Gunnery
The 20 mm. AA, guns were removed in 1957. The 40 mm. guns are to be replaced by '50 cal, machine guns.

Designators The designation of all these ships was changed from WAVP to WHEC in 1966 (effective on 1 May).

Listing
All United States Coast Guard cutters and tenders are officially listed in order of length.

Photographs

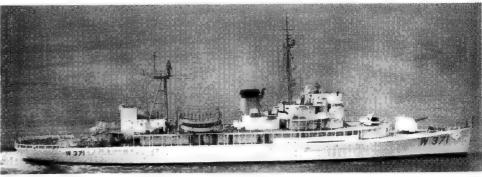
A photograph of Half Moon appears in the 1952-53 to 1957-58 editions,, of Mackinac (port bow surface view) in the 1954-55 to 1957-58 editions, of Rockaway in the 1958-59 to 1964-65 editions and of Matagorda in the 1963-64 to 1965-66 editions.





GRESHAM

1965, United States Coast Guard, Official



MACKINAC

1966. United States Coast Guard Official

MEDIUM ENDURANCE CUTTERS (WMEC)

11 + 5 New Construction, 210 Class

Displacement:	930 tons standard (973,
	"Reliance" class and 1,000 tons
	full Joad)
Dimensions:	2101 (o.a.)×34×101 feet
Guns:	1-3 inch, 50 cal. forward
Aircraft:	HH52A helicopter
Machinery:	2 shafts. B,H.P.: 5,000=18 kts.
	see Engineering notes below
Radius:	5,000 miles at 15 kts. (cruising)
Complement;	64 (7 officers, 57 men)

General

A new class of cutters designed by the U.S. Coast Guard. Primarily intended for search and rescue duties, the superstructure is arranged on three levels forward of midship, affording the wheelhouse 360 degree visibility. Another feature is a flight deck aft suitable for carrying the Coast Guard's newest type of rescue helicopter. A streamlined tower type mast with platform, yard and gaff accommodates the navigation and signal lights and antennae. Conspicuously missing is the conventional funnel, which is eliminated by the use of the exhaust vent in the stern. Equipped with facilities for ocean towing of vessels up to 10,000 tons gross. The accommodation, is comparable with that in the most modern merchant ships. Air conditioned throughout. These are the first of a proposed 29 ships.

Programmes:—1962 Dilligence Religione: 1943

Programmes:—1962 Diligence, Reliance; 1963 Vigilant; 1964 Active, Confidence; 1965 Courageous, Dauntless, Resolute, Steadfast, Valiant, Venturous; 1966 Alert, Decisive, Dependable, Durable, Vigorous.

Engineering
"Reliance" Class (Active, Confidence, Diligence, Reliance, Vigilant):—Each of the twin screws is driven by a combination 1,500 H.P. turbo-charged diesel and 1,000 H.P. gas turbine. Controllable pitch propellers for reverse. Cruising on diesels, top speed on gas turbines. Unmanned engine room.
"Resolute Class (11 later ships, 620 to 630):—

2 diesels

	No.	Builders	Laid down	Launched	Completed
ACTIVE	WMEC 618	Christy Corpn.	_		_
ALERT	WMEC 630	American S.B.	_		-
CONFIDENCE	WMEC 619	Coast Guard Yd.	4 Aug. 1964	8 May 1965	19 Feb. 1966
COURAGEOUS	WMEC 622	Coast Guard Yd.			diame.
DAUNTLESS	WMEC 624	Coast Guard Yd.			
DECISIVE	WMEC 629	American S.B.	-	-	_
DEPENDABLE	WMEC 626	American S.B.	_	L	— — — — — — — — — — — — — — — — — — —
DILIGENCE	WMEC 616	Todd Shipyard	-	20 July 1963	26 Aug. 1964
DURABLE	WMEC. 628	American S.B.	_	-	_
RELIANCE	WMEC 615	Todd Shipyard	29 Sep. 1962	25 May 1963	20 June 1964
RESOLUTE	WMEC 620	Coast Guard Yd.	-		_
STEADFAST	WMEC 623	Coast Guard Yd.	-	-	-
VALIANT	WMEC 621	Coast Guard Yd.	-	_	_
VENTUROUS	WMEC 625	Coast Guard Yd.			
VIGILANT	WMEC 617	Todd Shipyard		23 Dec. 1963	30 Oct. 1964
VIGOROUS	WMEC 627	American S.B.	-	-	_

Reclassification

Reclassification
Designed and first units built as Patrol Craft
(WPC) but this type were officially redesignated Medium Endurance Cutters in 1964, and their designation was changed from WPC to WMEC on 1 May 1966.

Photographs A photograph of Reliance appears in the 1964-65 and 1965-66 editions.



VIGILIANT

1966, United States Coast Guard, Official

Medium Endurance Cutters-contd.

3 "Argo" Class (WMEC, ex-WPC)

ARIADNE (0)

AURORA 103

Displacement: Dimensions:

Guns:

337 tons standard (370 tons full load) 165 (o.a.) \times 25 $\frac{1}{2}$ \times 9 $\frac{1}{2}$ feet 1—3 inch, 50 cal. Winston diesels. 2 shafts. B.H.P.: 1,340=14 kts.

Rated as 165 ft. Cutters, Built of steel. All launched in 1931-34. Pandora and Perseus were sold in 1959, and Nemesis and Nike were deleted from the list in 1965. A photograph of Aurora appears in the 1952-53 to 1960-61 editions.



ARIADNE

1965, United States Coast Guard, Official

11 "Active" Class (WMEC, ex-WSC)

AGASSIZ 126 ALERT 127 CAHOONE 131

CARTIGAN 132 EWING 137

GEN. GREEN 140 KIMBALL 143 LEGARE 144

McLANE 146 MORRIS 147 YEATON 156

TRITON 116

Displacement: Dimensions: Guns:

220 tons standard (290 tons fLII load)
125 (o.a.)×23½×9 feet
1—40 mm, AA.
Diesels. 2 shafts. B.H.P.: 800=13 kts.

Machinery:

General

Rated as 125 ft. Cutters. Built of steel. All launched in 1926-27. All re-engined in 1939-42. Bonham was disposed on in 1959, Diligence in 1961, Active, Marion and Travis is 1962, Boutwell in 1963, Cayahoga in 1964 and Frederick Lee in 1965. A photograph of Agassiz appears in the 1953-54 to 1959-60 editions, and of Legare in the 1960-61 to 1964-65 editions.



GENERAL GREENE

1965, United States Coast Guard, Official

TRAINING CUTTER (WTR)

I Ex-U.S.N. MSF Type

WTR 385 TANAGER (ex-U.S.S. MSF 385)

Displacement: 890 tons standard (1,077 tons full load)
Dimensions: 215 (w.l.), 221 (σ , σ ,) \times 32 $\frac{1}{4}$ \times 10 $\frac{1}{4}$ feet
Machinery: Diesel-electric, 2 shafts. B.H.P.: 3,474=18 kts.
Complement: 5 officers, 34 men (80 reserve trainees)

General Former fleet minesweeper, large steel-hulled type, acquired from the U.S. Navy in 1964 as a Coast Guard Reserve training ship, at Yorktown, Va. Her minesweeping equipment was removed and a living compartment added. Built by American Shipbuilding Co., Lorain, Ohio. Laid down on 29 Mar. 1944, Launched on 9 Dec. 1944. (The escort Lamar, PCE 899, was acquired from the U.S. Navy in 1965, for use a training ship, see later page.)



TANAGER

1964, United States Coast Guard, Official

PATROL CRAFT (WPB)

35 "95 ft." Steel Type

CAPE CARTER	95309	CAPE JELLISON	95317
CAPE CORAL	95301	CAPE KIWANDA	95329
CAPE CORWIN	95326	CAPE KNOX	95312
CAPE CROSS	95321	CAPE MORGAN	95313
CAPE CURRENT	95307	CAPE NEWAGEN	95318
CAPE DARBY	95323	CAPE PORPOISE	95327
CAPE FAIRWEATHER	95314	CAPE PROVIDENCE	CE 95335
CAPE FALCON	95330	CAPE ROMAIN	95319
CAPE FLORIDA	95325	CAPE ROSIER	95333
CAPE FOX	95316	CAPE SABLE	95334
CAPE GEORGE	95306	CAPE SHOALWAT	TER 95324
CAPE GULL	95304	CAPE SMALL	95300
CAPE HATTERAS	95305	CAPE STARR	95320
CAPE HEDGE	95311	CAPE STRAIT	95308
CAPE HENLOPEN	95328	CAPE TRINITY	95331
CAPE HIGGON	95302	CAPE UPRIGHT	95303
CAPE HORN	95322	CAPE WASH	95310
		CAPE YORK	95332
CG 95321—95335	CG 95312-9531	4 95316-95320 C	C 023000231

"C" Class (built 1958-59) "B" Class (built 1955-56) "A" Class (built 1953)

Displacement:

Dimensions: Guns:

106 tons (B), 103 tons (A), 98 (C)
95 (o.a.)×19×6 feet
"C" Class: 1—20 mm.
"B" Class: 1—40 mm., D.C.T. rocket launchers
"A" Class: 2—20 mm, D.C.T. rocket launchers
4 diesels. 2 shafts (2 engines in tandem each shaft)
B.H.P.: 2,200=21 kts. (max.)
1,500 miles cruising range
15 ("A" and "B" classes), 13 ("C" class) Machinery:

Radius: Complement:

General
Rated as 95 ft. Cutters. Designed and built at Coast Guard Yard, Curtis Bay,
Maryland' for port security, search and rescue. Steel hulled, thin screws. A photograph of the "B" class appears in the 1959-60 and 1960-61 editions and of the "A" class in the 1954-55 to 1958-59 editions. "C" class boats, for search and rescue, have less armament, electromics and displacement.



CAPE PROVIDENCE

1963, United States Coast Guard, Official

70 "82 ft." Steel Type

POINT ARDEN	82309	POINT HOPE	82302
POINT ARENA	82346		82365
POINT BAKER	82342	POINT HUDSON	82322
POINT BANKS	82327		8235
POINT BARROW	82348		82357
POINT BATAN	82340		82306
POINT BENNET	82351		82345
POINT BONITA	82347		82320
POINT BRIDGE	82338		82367
POINT BROWN	82362		82304
POINT BUCHON	82359	POINT LEDGE	82324
POINT CAUTION	82301	POINT LOBOS	82366
POINT CAUTION POINT CHARLES	82361		82321
POINT CHICO	82339	POINT LOOKOUT	82341
POINT CLEAR	82315	POINT MARONE	8233I
POINT COMFORT	82317	POINT MAST	82316
POINT COUNTESS		POINT MANROE	82353
POINT CYPRESS	82326	POINT NOWELL	82363
POINT DIVIDE		POINT ORIENT	82319
POINT DUME	82325		B2305
POINT ELLIS	82330	POINT RICHMOND 8	32370
POINT ESTERO	82344		82332
POINT EVANS	82354	POINT SAL	82352
POINT FRANCIS	82356		82313
POINT FRANKLIN			82349
POINT GAMMON			32358
POINT GARNET			B2312
POINT GLASS	82336		82314
POINT GLOVER	82307	POINT VERDE	82311
POINT GRACE	82323	POINT WARDE	82368
POINT GREY	82324		82329
POINT HANNON	82355		32343
POINT HERRON	82318		32308
POINT HEYER			32364
POINT HIGHLAND	82333		32360
		POINT YOUNG 8	52303



POINT THATCHER (gas turbines).

1962, United States Coast Guard, Official

Patrol Craft (WPB)-contd.

70 "82 ft." Steel Type-contd.

82332--82370 'C'' class (built 1962-63 and 1965-66)

Displacement: Guns: Machinery:

CG 82318—82331 "B" Class (built 1961) CG 82301-82317
"A" Class (built 1960-61)

64 tons standard (67 tons full load) 78 $\frac{1}{8}$ (w.l.), 83 (o.a.)×17 $\frac{1}{4}$ ×5 $\frac{1}{4}$ feet 1—20 mm. 2—diesels. 2 shafts. B.H.P.; 1,200=17 kts. (see Notes)

Complement: General

General
Rated as 82 ft. Cutters. Designed and built at Coast Guard Yard, for law enforcement, search and rescue. Steel hulls, unmanned engine room controlled from the bridge, power steering and air conditioning. "C" class modifications (also 82318) include increase in B.H.P. to 1,600 and speed to 23 kts. In addition to diesels, Point Thatcher has 2 Saturn gas turbines of 1,100 H.P. each, giving over 20 knots. Controllable pitch propellers. In June, 1965 seventeen of these craft were deployed with the Navy and transferred to duty in Vietnam (they have a double action gun consisting of a 50 cal, machine gun mounted on top of an 81 mm. mortar, replacing the former 20 mm. gun). As a result 17 replacement cutters are in the construction programme plus nine already planned. Of the latter, Point Arena, Point Barrow, Point Bonita, Point Franklin, Point Judith and Point Spencer were built under the Fiscal Year 1965 Programme by Martinac S.B., Tacoma, Wash., and 82351 to 82370 in the 1966 programme.

Nomenclature
CG 82301-82344 were assigned 'Point' names in Jan. 1964, and redesignated patrol craft instead of patrol boats.



POINT LEAGUE

1963. United States Coast Guard. Official

ICEBREAKERS (WAGB)

WAGB 4 GLACIER (ex-U.S.N. AGB 4)

Displacement: Dimensions: Aircraft: Guns:

8,449 tons $310{\times}74{\times}29$ feet 2 Helicopters 2 —5 inch 38 cal. twin mount; 6—3 inch, 50 cal. in

Machinery:

nenclosed twin mounts.

10 Fairbanks-Morse diesels and 2 Westinghouse 10,500 H.P. electric motors. 2 shafts. S.H.P.: 21,000=18-3

Complement: General

339 (19 officers, 320 men)

General

Designed and built by Ingall's Shipbuilding Corporation, Pascagoula, Mississippi, Laid down on 3 Aug. 1953, launched on 27 Aug. 1954 and commissioned on 27 May 1955. Designed for breaking ice more than 20 feet thick. Her bow is heavily armoured for driving the ship on top of the ice field and crushing it by sheer weight. Helicopters are carried to spot the best course through the ice. Largest and highest powered American icebreaker yet built. Has largest capacity single-armature D.C. motors ever built and installed in a ship. Carries an LCVP in addition to five boats and rafts for entire ship's company. Thick double hull, Cruising speed is 12 knots.



GLACIER

1966. United States Coast Guard, Official

WAGB 83 MACKINAW (ex-Manitowac)

Displacement: Dimensions:

5,252 tons 290 (o.a.)×74×19 feet

Aircraft: Machinery:

1 helicopter
Diesel, with electric drive, 3 shafts (1 forward, 2 aft)
B.H.P.: 10,000=18·7 kts.
60,000 miles range at economical speed of 9 kts.

Radius:

General
Built by Toledo Shipbuilding Co., Ohio. Laid down on 20 Mar. 1943. Launched on
6 Mar. 1944. Commissioned on 20 Dec. 1944. Completed in Jan. 1945. Specially
designed and constructed with 1§ in. plating for service as icebreaker on the Great
Lakes, Equipped with two 12-ton cranes. Clear area for helicopter is provided on the
quarter deck. Machine guns were removed early in 1962. Photographs of Mackinaw
appear in the 1944-45 to 1965-66 editions.

Icebreakers-contd.

7 "Wind" Class

			No.			-	Launched
ATKA (ex-Southwind)	WAGB	280	(ex-AGB	3)		8	Mar. 1943
BURTON ISLAND	WAGB	283	(ex-AGB	1,	ex-AG 88)		
EASTWIND	WAGB	279			,	6	Feb. 1943
EDISTO	WAGB	284	(ex-AGB	2,	ex-AG 89)	29	May 1946
NORTHWIND	WAGB	282	-			25	Feb. 1945
STATEN ISLAND (ex-Northwind)	WAGB	278	(ex-AGB	5)			Dec. 1942
WESTWIND	WAGB	281	•	-		3-1	Mar. 1943

Displacement: Displacement Dimensions: Aircraft:

Guns:

3,500 tons standard (6,515 tons full load)
250 (pp.), 269 (o.a.)×63½×29 feet
2H-19 or 2 H-52 helicopters
EastWind: 2—3 inch, 50 cal.
Northwind: 2—5 inch, 38 cal.
Other five: 1—5 inch, 38 cal.
Other five: 1 —5 inch, 38 cal.
6 diesel-electric. 2 shafts. B.H.P.: 13,300=16 kts.
38,000 miles range at economical speed of 10.5 kts.
21 officers, 195 men Machinery: Radius: Complement:

General

General All built by the Western Pipe & Steel Co., San Pedro, California. Construction is entirely welded, with double hull and exceptionally heavy plating designed to crush ice 9 ft, thick. Forward shafts were removed. All ships have helicopter platform aft. Northwind has experimental telescopic helicopter hanger, Northwind (first ship of that name). Southwind (Severini Veter) and Westwind (Severini Pollus) were lent to the Soviet Navy in 1945, Southwind was returned in 1950, other two in Dec. 1951. The four 40 mm, guns in Northwind and Westwind and the four 20 mm, guns in Eastwind were removed in 1962. Transfers Transfers

Transfers

It was officially announced in June 1965 that all five of the U.S. Navy icebreakers
would be transferred to the Coast Guard to consolidate a responsibility divided
between the U.S.N. and U.S.C.G. Edisto was transferred on 20 Oct. 1965, Staten
Island on I Feb. 1966; Glacier, on 30 June 1966; Atka on 20 Oct. 1966; and
Burton Island, on I Nov. 1966.

Photographs Photographs of Eastwind appear in the 1958-59 to 1965-66 editions. A photograph of Burton Island appears n the 1958-59 to 1965-66 editions, and of Edisto in the 1956-67 and 1957-58 editions.



NORTHWIND

1964, United States Coast Guard, Official



WESTWIND

1966, United States Coast Guard, Official

WAGB 38 STORIES (ex-Eskimo)

Displacement: Dimensions: Guns:

1,715 tons standard (1,925 tons full load)
230 (o.a.)×43×15 feet
1—3 inch. 50 cal. 2 Rocket launchers
2 H-13 helicopters or 1 H-19 or H-52
Diesels-electric. 1 shaft. B.H.P.: 1,800=14 kts.

Machinery:

Built by Toledo Shipbuilding Co., Ohio. Launched in 1942. Ice patrol tender. Helicopter platform aft, Strengthened for ice navigation. Employed on Alaskan service, Search, rescue, and law enforcement are primary duties. Makes supply runs to isolated Coast Guard installations within helpatrol area. Her designation changed from WAG to WAGB, effective on 1 May 1966.



STORIS

1965, United States Coast Guard, Official

SEAGOING TENDERS (WLB)

5 "Heather" Class (Former Navy Minelayers)

HEATHER (ex-Obstructor)
IVY (ex-Barbican)

JONQUIL (ex-Bastion) MAGNOLIA (ex-Barricade)

WILLOW (ex-Picket)

Displacement:

1,054 tons standard (1,250 tons full load)
1883 (o.a.)×37×12 feet

Machinery:

Triple expansion. 2 shafts. I.H.P. 1,200=12 kts.

General

Ex-Army mineplanters, ex-U.S. Navy auxiliary minelayers, ACM 7, 5, 6, 3, and 8. Launched in 1942, WLB 331, 329, 330, 328, 332, respectively. Redesignated Seagoing Tenders, WLB instead of Buoy Tenders, WAGL on 1 Jan. 1965.



HEATHER

1966, United States Coast Guard Official

38 "Cactus" and "Iris" Classes

20 Morine Iron & S.B. Co., Duluth
388 BASSWOOD
390 BLACKHAW (18 June 1943)
391 BLACKHORN (20 July 1943)
306 BUTTONWOOD (28 Nov. 1942)
270 CACTUS (25 Nov. 1941)
300 CITRUS (15 Aug. 1942)
292 CLOVER (1942)
301 CONIFER (3 Oct. 1942)
277 COWSLIP (1942)
295 EVERGREEN
394 HORNBEAM (15 Aug. 1943)

295 EVERGREEN
394 HORNBEAM (15 Aug. 1943)
305 MESQUITE (14 Nov 1942)
308 PAPAW
307 PLANETREE
401 SASSAFRAS (1943)
402 SEDGE (1943)
403 SPAR (2 Nov. 1943)
404 SUNDEW (8 Feb. 1944)
405 SWEETBRIAR (30 Dec. 1943)
309 SWEETGUM (1943)

17 Zenith Dredge Co., Duluth
406 ACACIA (ex-Thistle, 7 Apr. 1944)
62 BALSAM (1942)
389 BITTERSWEET (1943)
393 FIREBUSH (1943)
393 FIREBUSH (1942)
395 IRIS (10 Mar. 1944)
291 LAUREL (4 Aug. 1942)
396 MALLOW (1943)
397 MARIPOSA (7 Jan. 1944)
398 SAGEBRUSH (30 Sep. 1943)
400 SALVIA (15 Sep. 1943)
296 SORRELL (28 Sep. 1942)
303 TUPELO (28 Nov. 1942)
289 WOODBINE
407 WOODBRUSH (1944)

1 Coast Guard Shippard, Curtis Bay 297 IRONWOOD (Mar. 1943)

Dimensions: Guns: Machinery:

935 tons standard (1,025 tons full load)
180 (o.a.)×37×14 feet
1—3 inch, 50 cal.: rocket launchers*
Diesel electric. B.H.P.: 1,200=12 kts. (Citrus, Clover, Conifer, Cowslip, Evergreen, Tupelo, Woodbine, B.H.P.:
1,000=11 kts). Some have Sundew diesels of 1,800

General

Builders and launch dates above. Evergreen is used as oceanographic cutter, and designated WAGG; she was the International Ice Patrol Vessel for 1963. Cowslip was fitted with controllable pitch transverse bow propeller in 1961. Bittersweet was fitted with bow thruster propeller in 1966. All this class to be so fitted. Photographs of Cactus and Firebush appear in the 1959-60 to 1964-65 editions. *3 inch guns and ASW equipment to be removed and '50 cal M.G. to be installed, except in Citrus,, Cowslip, Evergreen, Sedge and Sorrel.



BLACKHAW

1965, United States Coast Guard, Official



EVERGREEN

1966, United States Coast Guard Official

COASTAL TENDERS (WLM)

3 "Hollyhock" Class

HOLLYHOCK

WALNUT

Displacement: Dimensions: Machinery:

FIR

989 tons 175×32×12 feet

Diesel Reduction. 2 shafts. B.H.P.: 1,350=12 kts.

General General Nos. WLM 212, 220 and 252, respectively. Launched in 1937 (Hollyhock) and 1939 (Fir and Walnut), Walnut was converted and re-engined by Willamette Iron & Steel Co., Portland, Oregon, in 1958. This class and following were redesignated Coastal Tenders, WLM, instead of Buoy Tenders, WAGL (effective 1 Jan. 1965).



WALNUT

1963, United States Coast Guard Official

JUNIPER

Displacement: Dimensions: 794 tons 177×323×91 feet

Machinery:

Diesel, with electric drive, 2 shafts. B.H.P.: 900=11

Launched on 18 May 1940. No. WLM (ex-WAGL) 224, Redesignated WLM on 1 Jan. 1965. ARBUTUS

960 tons 175×32×124 feet Displacement: Dimensions:

Machinery: Reciprocating. 2 shafts, I.H.P.: 1,000=11 ks.

General

Launched in 1934, No. WLM (ex-WAGL) 203. Redesignated WLM on 1 Jan. 1965. Disposals

Hemlock was decommissioned in 1958 and sold. Violet was decommissioned in 1962, and sold in 1963.

MISTLETOE

Displacement: 1,040 tons

Dimensions: Machinery: 173×34×11 feet
Reciprocating. 2 shafts. I.H.P.: 1,000=11 kts.

General

Launched in 1939. No. WLM (ex-WAGL) 237. Redesignated WLM on 1 Jan. 1965.

LILAC

Displacement:

770 tons $172\times32\times8\frac{1}{2}~\text{feet}$ Reciprocating. 2 shafts. I.H.P.: 1,000=11.5 kts. Dimensions: Machinery:

General

Launched in 1933. No. WLM (ex-WAGL) 227, Redesignated WLM on 1 Jan. 1965.

3 "Red Wood" Class

RED BEECH 686

RED BIRCH 687 Displacement: Dimensions: Machinery:

471 tons standard 157(o.a.)×32×6 feet 2 diesels. 2 shafts. B.H.P.: 1,800=14 kts. 3.000 miles at 12 kts. cruising range

RED WOOD 685

WHITE SAGE WHITE SUMAC

Radius: Complement: General

General
Red Wood was laid down in 1963 and commissioned on 4 Aug. 1964 at the Coast
Guard Yard, Curtis Bay, Md., where Red Beech was commissioned on 20 Nov. 1964
and Red Birch was commissioned on 7 June 1965. Controllable pitch propellers. Bow
thruster unit to give high manoeuvrability. Hull reinforced for light icebreaking.
Steering and engine control on bridge wings as well as in pilothouse.



RED WOOD

1965, United States Coast Guard Official

WHITE ALDER WHITE BUSH WHITE HEATH

Displacement: Dimensions:

WHITE HOLLY WHITE LUPINE WHITE PINE 435 tons 133 (o.a.)×30×10 feet Diesel. B.H.P.: 600=10 kts.

8 "White" Class

General

All launched in 1943. All eight ships are former U.S. Navy YFs, adapted for the Coast Guard.

Disposals Of the two Disposals

Of the two "Hawthorne" class coastal tenders, Hawthorne, WLM 215 (ex-WAGL 215) was decommissioned on 24 July 1964, and Oak, WLM 239 (ex-WAGL 239) on 1 Sep. 1964. Both were officially deleted from the list in 1965. They were replaced by Red Beech and Red Wood, see above. The larger but older Cedar was sold in lune 1955

INLAND TENDERS, LARGE (WLI)

10 "100 ft." Class

AZALEA (18 Feb. 1958) BARBERRY (14 Nov. 1942) BLUEBELL

BUCKTHORN BRIER COSMOS (11 Nov. 1942)

PRIMROSE RAMBLÉR SMILAX VERBENA

Displacement:

178 tons

176 tons 100×24×4½ feet Diesel. 2 shafts. B.H.P.; 300=8·5 kts. 15 (1 officer, 14 men)

Machinery: Complement:

General

Launch dates above. Eight are of "A" Class. Azalea, WLI 641, of "B" Class, laid down on 1 Oct. 1957 and commissioned on 23 May 1958, was built at the Coast Guard Yard, Curtis Bay, Maryland, to replace the old Palmetto. She is air-conditioned and has a pile driver in the bow. See photograph in the 1959-60 to 1965-66 editions. She cost \$500,000. Buckthorn, WLI 642, of "C" Class, built at Coast Guard Yard, commissioned on 17 July 1964.



BUCKTHORN

1966, United States Coast Guard, Official

HICKORY

Displacement: Dimensions:

400 tons $131\frac{1}{4}\times24\frac{1}{2}\times9\frac{1}{2}$ feet Reciprocating. I.H.P.: 500=12 kts.

Machinery: General

Laumched in 1933. This ship and following were redesignated Inland Tenders, Large, WLI, instead of Buoy Tenders, WAGL (effective 1 Jan. 1965).

Displacement: Dimensions: Machinery:

400 tons $124\times29\times7\frac{1}{2}$ feet Diesel, with electric drive. B.H.P.; 600=10 kts.

Launched in 1934, Redesignated Inland Tender, Large, WLI, on 1 Jan. 1965.

3 "Maple" Class

MAPLE

NARCISSUS

Displacement: Dimensions: Machinery:

342 tons (Maple, 350 tons) 122×27×6! feet Diesel. 2 shafts. B.H.P.: 400=10 kts.

All launched in 1939, Redesignated Inland Tenders, Large, WLI, on 1 Jan. 1965.

2 "Columbine" Class

LINDEN Displacement:

323 tons $121\frac{1}{2}\times25\times6\frac{3}{4}~~feet$ Diesel, with electric drive. B.H.P.: 240=9 kts. Dimensions: Machinery:

General

Launched in 1931 (Linden) and 1933 (Wistaria). A new engine for Linden was provided in the Fiscal Year 1959 programme. Sister ship Columbine, WLI 208, decommissioned on 8 Oct. 1965 and is in storage at Alameda, Calif.

Disposals

Of the two ships of the "Aster" class, Thistle decommissioned in 1957, and was sold in 1959, and Aster was decommisioned on 15 Aug. 1962, to be sold.

INLAND TENDERS, SMALL (WLI)

CLEMATIS (1944) SHADBUSH (1944) }93 tons

ELM (1937), 69 tons

Small buoy tenders. Redesignated Inland Tenders, Small, WLI, on 1 Jan. 1965.

Blackrock was sold to the Government of Haiti in Nov. 1945. Palmetto was decommissioned in June 1958 and sold in 1958; she was replaced by the new Azalea (see "100-ft" class above) in 1958. Rhododendron was decommissioned for sale in 1958. Polnciana was decommissioned on 17 Aug. 1962. Althea on 10 Nov. 1962, Beech on 23 Jan. 1963, Myrtle on 8 Feb. 1963, Birch on 24 Feb. 1963, Dahilia on 9 Oct. 1964, Cherry on 1 Dec. 1964, Bluebonnet and Jasmine on 18 Jan. 1965.

ANVIL (1962) AXE (1966)

CLAMP (1964) HAMMER (1962)

HATCHET (1966) MALLET (1962) SLEDGE (1962)

SPIKE (1966) VISE (1962) WEDGE (1964)

ZINNIA

WISTARIA

Rated as Construction Tenders, Inland, Small (WLIC). All 145 tons.

RIVER TENDERS (WLR)

FOXGLOVE (1944) SUMAC (1944) FERN (6 Nov. 1942) }350 tons

DOGWOOD (1942) FORSYTHIA (1940) SYCAMORE (1940) GOLDENROD (1938) POPLAR (1939)

General

Rated as River Tenders, Large (WLR). Goldenrod was rebuilt and re-engined in 1960. Foxglove was refitted in 1961 with three 400 B.H.P. diesels.

Rated as River Tenders, Small (WLR). Kickapoo, under construction, is due for smalletion in the second quarter of Fiscal Year 1967.

LANTANA OLEANDER GASCONADE MUSKINGUM WYACONDA CHIPPEWA **KICKAPOO** (1967)

(1943) (1940) (1964) (1965) (1965) (1965) (1966) 273 tons 80 tons 145 tons OMACHITA (1960) CIMARRON (1960) OBION (1962) SCIOTO (1962) OSAGE (1962) SANGAMON (1962)

- 139 tons

SUPPLY SHIPS (WAK) I Ex-U.S.N. AK Type

WAK 186 KUKUI (ex-U.S.S. Colquitt, AK 174)

4,900 tons light (7,450 tons full load) 5,900 tons gross 320 (w.l.), 338½ (o.a.)×50×21 feet Nordberg diesel. B.H.P.: 1,750=11·5 kts. Displacement: Dimensions: Machinery: Nordberg die 14,500 miles Radius:

General

Former naval cargo ship based at Honolulu to perform logistic services for U.S. Coast Guard stations in the Pacific. Built in 1945 by Froemming Bros., Milwaukee, Wisc. Launched In 1944. Maritime Administration type CI-M-AVI. Appearance originally similar to that of Courler, see below.



KUKUI

1965. United States Coast Guard, Official

I Ex-U.S.A. FS Type

WAK 169 NETTLE (ex-FS 396)

Displacement:

728 tons $176\frac{1}{4}$ (o.a.) \times 32 \times 10 feet Diesel. B.H.P.: 1,000=13 kts. Machinery:

Ex-Army craft. Launched in 1944. Trillium was transferred to the U.S. Navy

Ex-Army craft. Launched in 1944. Trillium was transferred to the U.S. Navy Reserve Fleet on 7 July 1955, for delivery to the Korean Navy in 1956. AKL 43 (ex-FS 219), was transferred from the Navy to the Coast Guard at Curtis Bay, Md. on 29 Oct. 1963, but officially deleted from the list in 1965. Transfer
The cable layer, Yamacraw, WARC 333, was transferred to the U.S. Navy on a loan basis in 1959, but was stricken from the Navy list on 1 July 1965 and transferred to the Maritime Administration.

TRAINING SHIPS (WTR)

I Ex-WAGR (ex-U.S.N. AK) Type

WTR (ex-WAGR) 410 COURIER (ex-Coastal Messenger, ex-U.S.S. Doddridge, AK 176)

5,800 tons standard (7,500 tons full load) Displacement: Measurement:

5,926 tons deadweight 338½×50½×21 feet Diesel, direct drive B.H.P.: 1,700=11 kts. Approximately 14,500 miles Dimensions: Machinery:

Radius: General

General CI-M-AVI type, launched in 1945. Built as a naval cargo ship but not used by the Navy. Acquired by the U.S. Coast Guard from the U.S. Maritime Commission in 1951, fitted out as an overseas radio relay base, manned by the Coast Guard and operated for the United States Information Agency as a relay station for the "Voice of America" broadcasts from 7 Sep. 1952 until 17 May 1964. She was virtually a seagoing radio broadcasting station with transmitting equipment the most powerful of its kind ever installed in any vessel. She commissioned on 15 Feb. 1952 and began broadcasts on 7 Sep. 1952, being stationed at Island of Rhodes, Greece. She returned to the U.S.A. in 1964 and was decommissioned on 25 Aug. 1964, but was converted and recommissioned on 1 July 1965 and employed as a training "cutter" for the reserve at Yorktown, Va. Her special communication equipment has been removed.

Photographs

A port bow view of Courier appears in the 1952-53 to 1962-63 editions, and a port quarter, near broadside, view in the 1963-64 to 1965-66 editions.

I Ex-U.S.N. PCE Type

WTR 899 LAMAR (ex-U.S S. PCE 899)

Displacement: Dimensions,

640 tons standard (903 tons full load)
180 (w.l.), 184½ (o.a.) ×33×9½ feet
1—3 inch, 50 cal, d.p.; 6—40 mm. AA. (3 twin).
Original armament
G.M. diesels. 2 shafts. B.H.P.: 2,000=15 kts. Guns:

Original armament G.M. diesels. 2 shafts. B.H.P.: 2,000=15 kts. 60 (5 officers, 55 men) Navy allowance. Accommoda-tion for 9 officers, 90 men. Machinery: Complement:

General
Former escort, 180 ft. steel type, acquired from the U.S. Navy in 1965, converted for use as Coast Guard Reserve training ship and commissioned in 1965. Built by Willamette Iron & Steel Corp., Portland, Oregon. Laid down 11 Jan. 1943. Launched on 11 Aug. 1943. Completed (first commission) on 17 Mar. 1945.



LAMAR

1966, United States Coast Guard, Official

I Ex-German Type (Auxiliary Barque)

EAGLE (ex-Horst Wessel) 327

Displacement: Dimensions: Sail area: Height of masts 1,634 tons (1,816 tons full load) 265 $\frac{1}{2}$ (pp.), 295 $\frac{1}{4}$ (o.a.)×39 $\frac{1}{2}$ ×17 feet 21,351 sq. ft.

As high as 18 kts. under full sail alone
Auxiliary diesel. I shaft. B.H.P.: 740=10 kts. Speed: Machinery: Oil fuel:

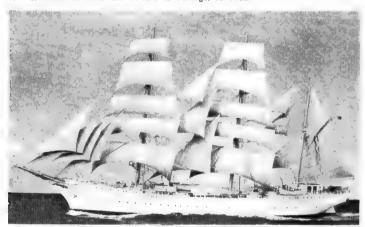
48 tons 3,500 miles at 10 kts. 280 Radius: Complement:

General

Former German training ship for 200 naval cadets, Built by Blohm & Voss, Hamburg, Launched on 13 June 1936. Taken by the United States as part of reparations after the Second World War for employment in U.S. Coast Guard Practice Squadron. Taken over at Bremerhaven in Jan 1946, Arrived at home port, New London, Conn. in July 1946. Has made several cruises to European waters to train C.G. cadets.

Class

Sister ship, Albert Leo Schlageter, was also taken by the U.S.A. in 1945 but was sold to Brazil in 1948 and re-sold to Portugal in 1962.



EAGLE

1965. United States Coast Guard, Official

I Yacht Type

PETREL 70001

General

Sailing yacht built in 1938. Acquired on 1 July 1955, 70 feet. Coast Guard Academy, New London, Conn.

Disposal

The former WSC Class cutter Cuyahoga, assigned to the Reserve Training Center as a Training Ship for Officer Candidates, was deleted from the list in 1964.

LIGHT SHIPS (WLV)

General
Total 23, of which all are active. 17 are on Station assignments and six are relief lightships. Overall length: 97 to 149 feet. Eight decommisioned lightships ware sold in 1955-56. WAL 511 was sold in 1959: WAL 505 sank after collision in 1960. WAL 534 (Nantucket) was re-engined in the 1960 Fiscal Year, WAL 504, WAL 508 and WAL 513 were decommissioned and placed in storage in 1959-60. WAL 515 was decomissioned in Nov. 1961, and WAL 510 in Nov. 1962. Four ships were decommissioned in Fiscal Year 1964 and three during Fiscal Year 1965. Three more are scheduled for decommissioning in Fiscal Year 1966. Remainder were redesignated WLV instead of WAL (effective 1 Jan. 1965).

AUXILIARY OCEAN TUGS (WATA)

2 "Modoc" Type

COMANCHE (ex-Wampanaog) 202

MODOC (ex-Bagaduce) 194

Displacement: Dimensions: Guns: Machinery:

534 tons standard (860 tons full load)
134½ (w.l.), 143 (o.a.)×34×12 feet
1—20 mm.
Diesel-electric. B.H.P.: 1,500=13 kts.
4 officers, 40 men

Complement:

General Equipped for search, rescue, firefighting and icebreaking. Comanche was transferred direct from the U.S. Navy, replacing Pandora: and Modoc was transferred from the Maritime Administration to the Coast Guard and commissioned at Seattle on 15 Apr. 1959, replacing Bonham. A photograph of Comanche appears in the 1959-60 to 1964-65 editions.



MODOC

1965, United States Coast Guard, Official

OCEANGOING TUGS (WAT)

2 "Acushnet" Type

ACUSHNET (ex-Shackle) 167

YOCONA (ex-Seize) 168

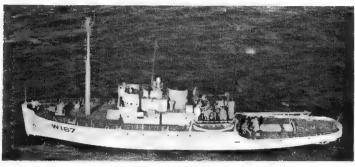
Displacement: Dimensions: Machinery:

1.557 tons standard (1,945 tons full load) 207 (w.l.), $213\frac{1}{2}$ (o.a.) $\times 39 \times 15\frac{1}{2}$ feet Diesel-electric. 2 shafts. H.P.: 3,000=13 kts.

General

Launched on 1 Apr. 1943 and 8 Apr. 1944, re-

Former U.S. Navy ARS type. spectively. Remodelled in 1960.



ACUSHNET

1965, United States Coast Guard, Official

4 "Avoyel" Type

AVOYEL (9 Aug. 1944) 150 CHEROKEE (10 Nov. 1939) 165

CHILULA (I Dec. 1944) 153 TAMAROA (I3 July 1943) 166

Displacement: Dimensions:

1,170 tons

Guns:

1,170 tons 195 (w.l.), 205\(\frac{1}{2}\) (o.a.)\(\times 38\(\frac{1}{2}\)\(\times 16\) feet 1\(-3\) inch, 50 cal. Diesel-electric. H.P.: 3,000=16 kts.

Machinery:

Avoyel and Chilula have been on loan from the United States Navy since 1956 (recommissioned from the Reserve Fleet). A photograph of Tamaroa appears in the 1959-60 to 1963-64 editions.



AVOYEL

1964, United States Coast Guard, Official

MEDIUM HARBOUR TUGS (WYTM)

13 "Arundel" Class

ARUNDEL (24 June 1939) 90 MAHONING (22 July 1939) 91 NAUGATUCK (23 Mar. 1939) 93 RARITAN (23 Mar. 1939) 93 KAW (1942) 61 MANITOU (29 Sep. 1942) 60

CHINOOK (July 1943) 96 MOHICAN (July 1943) 73 OJIBWA (10 Aug. 1943) 97 SAUK (10 Aug. 1943) 99 SNOHOMISH (10 Aug. 1943) 98 APALACHEE (1943) 71 YANKTON (1943) 72

Displacement: Dimensions:

328 tons
110 $(\sigma.\sigma.) \times 26\frac{1}{2} \times 12\frac{1}{4}$ feet
Diesel-electric, S.H.P.; 1,000=12 kts.

First pair were built by Gulfport Works, Port Arthur, Texas; second pair by Defoe Works, Bay City, Mich; third pair by Coast Guard Yard, Curtis Bay, Md; remaining 7 by Ira S. Bushey & Son, Brooklyn, N.Y. Launch dates above. Strengthened for ice-breaking.

4 "Calumet" Class

CALUMET 86

HUDSON 87

NAVESINK 88

TUCKAHOE 89

Displacement; Dimensions:

Machinery:

290 tons $110\frac{1}{2}\times24\times11\frac{1}{2}~feet$ Diesel, with electric drive, B.H.P.:=12 kts.

All launched in 1934. Hudson was built at Portsmouth Navy Yard, and the other three as Charleston Navy Yard,

There is also WYTM 85009 (ex-U.S.A. ST-710), 230 tons displacement, 85 (o.a.)×23×9 (mean) feet, direct drive diesel. S.H.P. 700=10 kts. Used at Coast Guard Yard.

SMALL HARBOUR TUGS (WYTL)

General
Six new steel-hulled harbour tugs, Nos. 65601-65606, were built by Gibbs Corporation, Jacksonville, Florida, In the Fiscal Year 1961 programme. 65 tons displacement, 65×19×7 (mean) feet. 400 H.P. diesel, complement 7. Six more, Nos. 65607-65612, were built by Barbour Boat Works, New Bern, N.C. In the Fiscal Year 1963 Programme, and three more, Nos. 65613, 65614 and 65615 by Western Boat Bldg. Corpn., Tacoma, Wash. in 1965-66.

onaguska, WYT 195, was returned to the Navy from which she was on loan.

OF SOVIET SOCIALIST REPUBLICS UNION

Administration

Commander-in-Chief of the Navy and First Deputy Minister of Defence: Admiral of the Fleet Sergei Georgiyevich Gorshkov. First Deputy Commander-in-Chief of Navy: Admiral Vladimir Afanasevich Kasatonov.

Strength

- 40 Nuclear Powered Submarines
- 340 Conventionally Powered Submarines
- 20 Cruisers
- 110 Destroyers
- 100 Escorts
- 300 Coastal Escorts

- 300 Minesweepers 100 Missile Patrol Boats 350 Motor Torpedo Boats 200 Landing Craft excluding LCMs

Auxiliaries and service craft run into thousands.

Naval Attaché in London: Captain 1st Rank Boris Mikhailovich Polikarpov.

Naval Attaché in Washington: Captain Aleksandr Romanovich Astafiev.

Nomenclature

Cruisers after statesmen, admirals or heroes. Destroyers after adjectives. Escorts after birds and winds.
Minesweepers after weapons and equipment.
Minelayers after rivers and lakes. Survey Ships after astronomical terms. Depot Ships after towns and rivers. Icebreakers after statesmen and Arctic explorers.

The hull or side numerals of warships change periodically, although apparently the pennant numbers of auxiliaries do not change.

State

Most ships are of recent construction. Most ships not being refitted are fully manned and operational. Cruisers, destroyers, submarines, many smaller craft are fitted for minelaying.

Appearance

Combatant Ships: Painted light grey all over. Auxiliaries: Painted somewhat darker grey. Surveying Ships: Black hulls wih red waterlines, yellow funnels with black tops.

Personnel

Total: 500,000 officers and ratings.

Mercantile Marine

Lloyd's Register of Shipping: 1,845 vessels of 8,237,847 tons gross

Cruisers, Leaders

Silhouettes

Scale: 150 ft.=1 inch.



Destroyers, Frigates











KOTLIN Class





KASHIN Class

TALLIN Class





KYNDA Class

Modified SKORY Class





KRUPNY Class

SKORY Class





KILDIN Class

KOLA Class







SAM KOTLIN Class

Later RIGA Class

RIGA Class

(Podvodnye Lodki) SUBMARINES

Programme

There are about 400 effective submarines, of which perhaps half are medium range. Most of the remainder are of the large oceangoing type. Most are known by numbers; some by names as well.

It is policy to maintain a four-theatre submarine fleet for operations in the Pacific, in the Baltic, in the Arctic, and in the Black Sea. A new type of submarine has been completed. Another type of muclear powered submarine is on trials. A new class of submarine is equipped with missile tubes. A new class of radar picket submarine is in service. Some submarines are armed with far-ranging surface rockets with nuclear and hydrogen warheads.

armed with rar-ranging surrace rockets with nuclear and hydrogen warheads.

New Construction

Some 30 submarines are under construction in Soviet dockyards. These are reported to include five different types as follows:

types as follows:

Nuclear powered ballistic missile type with long

range.
Nuclear powered anti-submarine type with high

Large nuclear powered cruise missile type with long range.

nge. Large diesel powered attack type with high speed. Large diesel powered cruise missile type with long range.

Nuclear Powered Submarines

15 "E" Class

Nuclear Powered Cruise Missile Type

Displacement:

5,600 tons surface
385×33×27 feet
6 launching tubes for missiles
Nuclear reactors, steam turbines.
2 shafts. 20 to 22 kts.; (max.),
12 to 14 kts. cruising
92 (12 officers, 80 men) Dimensions: Guided weapons: Machinery:

Complement: General

A new class of ocean ranging streamlined sub-marines, fitted with six cruise missiles in launching tubes elevated out of the flush deck, with launchers two abreast, Cruise missiles have a range of about 180 nautical miles. The "E" class submarines now in the Pacific were built at Komsomolsk

13 "H" Class

Nuclear Powered Ballistic Missile Type

Displacement:

Machinery:

3,500 tons surface, 4,100 tons

Dimensions:

Guided weapons: Tubes:

3,500 tons surface, 4,100 tons submerged
328×33×25 feet
3 launching tubes for missiles
6 bow for 21 inch torpedoes
Nuclear reactors, steam turbines.
2 shafts, S.H.P.: 15,000=25 kts, surface, 30 kts, submerged on

Complement:

General

A new class of fast nuclear powered long range submarines armed with three ballistic missile tubes in the large "sail", or conning tower. The earlier missiles are estimated to have a range of 380 nautical miles, but later ballistic missiles have a range of 600 to 3,000 nautical miles. Ten boats are reported to be operational.

12 "N" Class

Nuclear Powered Anti-Submarine Type

LENINSKY KOMSOMOL 270

Displacement:

3,200 tons surface, 4,000 tons

Dimensions:

Machinery:

3,200 tons surface, 4,000 tons submerged 328×32×24 feet 6 bow for 21 inch torpedoes Nuclear reactors, steam turbines. 2 shafts. S.H.P.: 15,000=25 kts. submerged 88

Complement:

General General

A new class of fast nuclear powered fleet submarines designed as anti-submarine hunter-killers.

Basically similar, in main particular to the "H" class
above. All reported to be operational. Vary in detail.

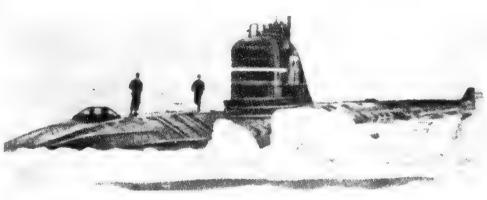


Missile submarine No. 788



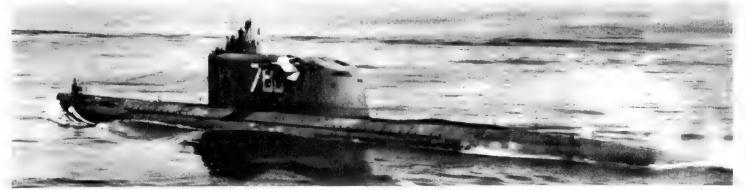
"N" Class Nuclear Powered Anti-Submarine Type

1965, col. Breyer



LENINSKY KOMSOMOL 270

added 1964



Missile submarine No. 780 (side opening hatches open)

Missile Submarines

2 "J" Class

Displacement: Dimensions:

Guided weapons:

1,600 tons surface
272\frac{1}{2}\times27\times20 feet
4 launchers for missiles, 2
before and 2 abaft the low and
extended sail or conning tower
Bow, for 21 inch torpedoes
Diesels=18 kts. surface
Electric motors=15 kts. submerced Tubes: Machinery:

General

General

A new type of medium sized submarines with a long superstructure fin and high surface freeboard. The prototype, launched in 1962, is reported to have left the Baltic in 1963, and a sister boat was completed in 1966.

30 "G" Class. Ballistic Missile Type

No. 773 No. 779 No. 780 No. 783 No. 788

Guided weapons: Torpedo tubes: Machinery:

2.350 tons surface, 2.800 tons

2,350 tons surface, 2,800 tons submerged 320×28×22 feet 3 vertical tubes for missiles 6—21 inch (bow) 3 dissels. 3 shafts. Total H.P.: 6,000-17·6 kts. surface. Electric motors=17 kts. submerged 22,700 miles surface cruising 86 (12 officers, 74 men)

Radius Complement:

Displacement:

Complement: 86 (12 officers, 74 men)

General

A class of ballistic missile submarines having a very
large conning tower fitted with three vertically mounted
tubes and hatches for launching guided missiles. Built
at Komsomolsk and Severodvinsk. Construction commenced in 1958.

10 "Z" Class. Ballistic Missile Type

Displacement:

2,100 tons surface, 2,6 submerged 295½×29×19 feet 2 launchers for missiles 6—21 inch 2,100 tons surface, 2,600 tons

Guided weapons: Tubes:

6—21 inch
Diesels, 2 shafts, B.H.P.: 10,000
=22 kts. surface
Electric motors, H.P.: 3,500=
16 kts. submerged Machinery:

Complement:

General

General
These are basically of "Z" class design but converted to ballistic missile submarines with larger conning towers and two vertical tubes for missile launching. Six boats were converted initially with further conversions in 1961.

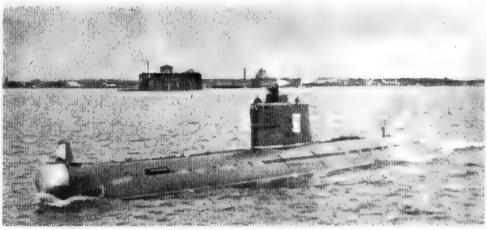
12 "W" Class. Guided Missile Type

General

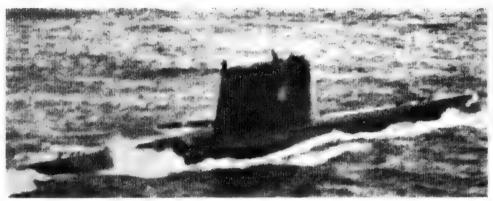
Some submarines of the "W" class are reported to be equipped with a special tank on deck for carrying guided missiles and with inclined missile launchers. Others have been converted to missile carrying submarines with single or twin cylinders on deck abaft the conning tower.

Photographs
See photograph of a twin cruise missile launcher on a Soviet submarine on page 444 (addenda) of the 1962-63 edition.

Submarines—contd.



"Z" Class (see next page)



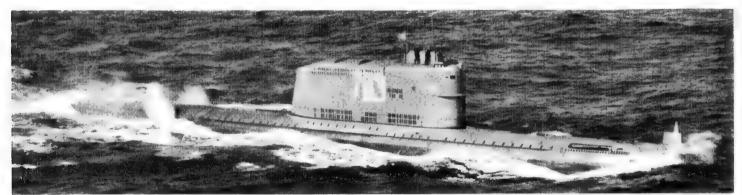
"Z" Class Ballistic Missile Type

1964



"F" Class (see following page)

1963



"G" Class missile submarine No. 783



No. 515

1966, col. Borg

Fleet Submarines

40 "F" Class. Large Attack Type

TCHELJABINSKYI KOMSOMOLETS No. 238 No. 515 No. 533 No. 911

2,000 tons surface, 2,300 tons Displacement:

Dimensions:

2,000 tons surface, 2,300 tons submerged 300×27×19 feet 8—21 inch (20 torpedoes carried) Diesels. 3 shafts. B.H.P.: 10,000 = 20 kts. surface Electric motors, H.P.: 4,000= 15 kts. submerged 70 Tubes:

Machinery:

Complement:

snort

General Improved versions of the "Z" class. Equipped with

25 "Z" Class. Large Oceangoing Type

No. 71 No. 72 No. 328 No. 958 No. 66 Displacement: 1,900 tons surface, 2,200 tons

submerged 295×26×19 feet 2—57 mm. in twin turret before Dimensions: Guns;

2—57 mm. in twin turret before conning tower; twin 25 mm. AA, on conning tower (in most boats guns are suppressed)
8—21 inch (6 bow, 2 stern). 24 torpedoes carried
Diesel-electric, 2 shafts,
Diesels: B.H.P.: 10,000=20 kts.
surface
Electric motors: H.P.: 3,500=
15 kts. submerged

Tubes:

Machinery:

15 kts, submerged 20,000 to 26,000 miles Radius: Complement: 70

General

General Large oceangoing type. Completed from 1954 to 1960. General appearance is streamlined with a complete row of rapid flooding holes along the casing. This class was stationed in the Baltic and Far East. The first of the class was laid down in 1951 and most were commissioned during 1954-60. Eighteen were built by Sudomekh Shipyard, Leningrad, in 1952-55 and others at Severodvinsk. At least three have been converted to radar pickets. Some may be oilers. Mime capacity of 40 is alternative to torpedo capacity. All equipped with snort.

20 "R" Class

No. 101 No. 202 No. 204 1,100 tons surface, 1,600 tons submerged 246×24×14½ feet 6—21 inch (bow) Displacement:

Dimensions:

Machinery:

246×24×142 reet 6—21 inch (bow) Diesels, B.H.P.: 4,000=18·5 kts, surface, Electric motors, H.P.: 2,500= 15 kts, submerged

Complement: 65

General
These "R" class submarines are of a modified "W" type with modernised superstructure, conning tower, and sonar installation. Reported to number 13 boats by the end of 1962.

25 "Q" Class. Medium Range Type

No. 75 No. 306 No. 98 No. 329 No. 192 No. 386 No. 528 306 329 386 No. 23 No. 47 No. 66 No. 37 No. 51 No. 68 No. 72 No. 45

650 tons surface, 740 tons sub-Displacement:

Dimensions:

650 tons surface, /40 tons supmerged
185×18×13 feet
2--25 mm. in gunhouse before the conning tower in some boats
4--21 inch
Diesel. 1 shaft. B.H.P.: 3,000
=18 kts. surface
Electric motors. H.P.: 2,500=
16 kts. submerged
50 tons
7.000 miles cruising range
40 Guns:

Tubes:

Machinery:

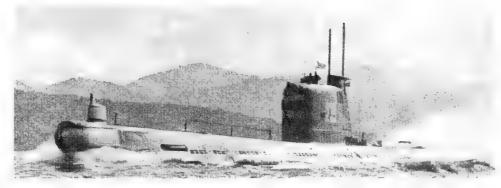
Oil fuel:

Radius:

Complement: General

Medium range, single screw submarines. Built from 1954 to 1960. Improved versions of the "Shch" class now discarded. Thirteen were constructed in 1955 by Sudomekh Shipyard, Leningrad.

Submarines-contd.



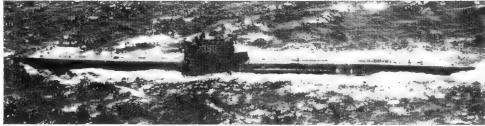
"F" Class No. 238

1965, col. Breyer



"R" Class No. 101

1963



"W" Class No. 350

1961



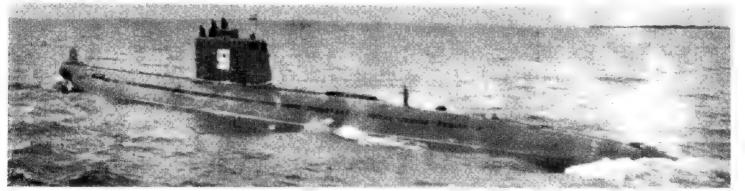
W 25 ("W 111" Class)

1959, Antonov Rogov



"O" Class

1965, col. Breyer



No. 958 "Z" Class

				0		0		. / [
No.	12	No.	68	No.	224	S	48	S	176
No.	25	No.	78	No.	244	S	77	S	221
No.	28	No.	81	No.	261	S	87	S	222
No.	29	No.	125	No.	305	S	91	S	237
No.	34	No.	148	No.	350		173		333
No.	66	No.	179	No.	355	-			
				No.	752				

Displacement: 1.030 tons surface, 1.180 tons

Dimensions:

Guns:

Tubes:

1,030 tons surface, 1,180 tons submerged 240×22×15 feet
Some had a 3.9 inch in a turret before the conning tower; 1 light AA. Others 2—57 mm., 2—25 mm, 6—21 inch (4 bow, 2 stern). 18 torpedoes carried 40 mines or 18 torpedoes Diesel-electric. 2 shafts. Diesels: B.H.P.: 4,000=17 kts. (surface) Electric motors; H.P.: 2,500=15 kts. (submerged) 13,000 to 16,500 miles 60 Mines Machinery:

Radius: Complement: 60

General

General
A class of medium range submarines built from 1950 to 1957 in yards throughout the Soviet Union. All streamlined. This group is subdivided into three types, the "W" class, the "WF" class, and the "W III" class Stationed in considerable numbers in the Baltic, the North, the Black Sea and the Far East, Equipped with snort. Fitted for minelaying.

SEVERYANYA

SLAVYANKA

Displacement:

1,000 tons surface (1,100 tons

submerged) 240×22×15 feet

Dimensions:

Diesels. B.H.P.: 4,000=17 kts. Machinery:

Surface
Electric motors. H.P.: 2,500=15

kts, submerged

General Converted "W" class submarines specially fitted out for scientific research. Severyanya is attached to the Soviet Institute for Fisheries and Oceanographic Research. Torpedo compartment converted into a laboratory. Observation portholes, top and bottom echo sounders, sonar, long range searchlight, underwater television camera.

Disposals of "K" Class

television camera.

Disposals of "K" Class

The few minelaying submarines of the "K" class which survived the Second World War were deleted from the list in 1963-64. If any remain they can only be used for training owing to age and obsolencence.

Disposals of "Shch" Classes

The 19 submarines of the "Shch IV" class, Sh 400, 401, 402, 403, 404, 407, 408, 410, 411, 412, 419, 422, 425, 426, 427, 428, 429, 430 and 431, were deleted from the list in 1964. The 50 boats of the "Sch" class, Sh 101 to 139, 141, 201, 203, 205, 207, 215, 305, 307, 309, 310, and 318, including most of the "Sch" class, Sh 101 to 139, 141, 201, 203, 205, 207, 215, 305, 307, 309, 310, and 318, including most of the "Sch" l, II and III classes, having become obsolete and worn out, were scrapped in 1960.

Disposals of Other Classes

The 30 old submarines of the "S(C)" class, S 4, 9, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 31, 35, 36, 37, 38, 54, 55, 56, 101, 102, 103, 104, 137 and 139; and the 18 coastal submarines of the "M IV" class, M 102, 103, 104, 105, 106, 111, 112, 119, 120, 121, 122, 123, 124, 171, 172, 174, 175 and 176 were discarded in 1963.

The old ex-German submarines N 27 (ex-U 2529), N 28 (ex-U 3035), N 29 (ex-U 3041) and N 30 (ex-U 3515) of the "XXII" types; S 81 (ex-U 1057), S 82 (ex-U 1058), S 83 (ex-U 3044) and S 84 (ex-U 1305) of the VIX type; and N 31 (ex-U 2353) of the "XXII" type, all taken over by the Soviet Navy as war prizes, were in 1963 reported to have been scrapped. For detailed list of disposals of older submarines of her own designs in her onw yards, see 1962-63 and earlier editions.

15 "MV" Class

М	269	М	272	M 275	М	278	М	281
М	270	М	273	M 276	M	279	M	282
М	271	M	274	M 277	M	280	M	283

Displacement:

350 tons surface, 420 tons

Dimensions:

Guns: Tubes: Machinery: submerged 167½×16×12 feet 1—45 mm. AA., 1 M.G. 2—21 inch

Oil fuel: Radius:

2-21 inch
Diesels. B.H.P.: 1,000=13 kts.
surface
Electric motors. H.P.: 800=10
kts. submerged
21 tons
4,000 miles at 10 kts. surface,
100 miles at 5 kts. submerged
24

Complement:

General
Built from 1946 to 1952, Designed for coastal operations. Some were transported in sections on the Trans-Siberian Railway and assembled at Vladivostock for service in the Pacific. The older boats are of little further fighting value.

Disposals 28 boats of the "MV" class, M 205, 206, 209, 211, 212, 214, 215, 216, 219, 234, 235 and 237 to 253, having become obsolete and worn out, were for disposal and at least one scrapped in 1962. M 200, 201, 202, 203, 254, 255, 256, 257 and 258 were deleted from the list in 1963, M 204 in 1964, and M 259 to M 268 in 1966.

Submarines—contd.



"W" Class

1966. Skyfotos



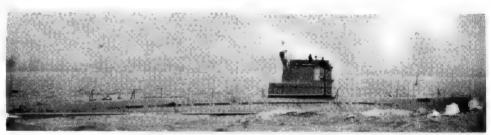
"W" Class

1965. Skyfotos



"W 111" Class

1959, Antonov Rogov



"W" 12 ("W 111" Class)

1959, Sergei Romanov



"W" Class



MV Class

CRUISERS

14 "Sverdlov" Class

ADMIRAL LAZAREV ADMIRAL NAKHIMOV ADMIRAL SENJAVIN ADMIRAL USHAKOV ALEXSANDR NEVSKII ALEKSANDR SUVOROV DMITRI DONSKOI DMITRI POZHARSKIY

DZERZHINSKI KOSMA MININ MIKHAIL KUTUSOV MURMANSK (ex-Zhdanov) OKTYABRSKAYA REVOLUTSIYA (ex-Molotovsk)
SVERDLOV

Displacement: Dimensions:

15,450 tons standard (19,200 tons full load)
Length: 656 (pp.), 689 (o.g.)
feet, Beam: 70 feet. Draught:
24½ (max.) feet
12—6 inch (150 mm.) in 4
triple turrets; 12—3·9 inch (100
mm.) in 6 twin mountings; 32—
37 mm. AA. in 16 twin mountings (see Gunnery)
Twin launchers aft in Admiral
Nakhimov and Dzerzhinski (see
Guided Missiles)
10—21 inch in 2 quintuple
mountings (see Torpedoes)
140 to 250 capacity
4 to 5 inch side belts; 1½ to 2
inch forward and aft; 5 inch
turrets; 6 inch C.T.; 1 to 2 inch
and 2 to 3 inch decks
Geared turbines, 2 shafts. S.H.P.:
130,000=34 kts.
6
4,000 tons

Guided weapons:

Tubes:

Mines:

Armour:

Machinery:

Boilers:

Oil fuel:

Radius:

6 4,000 tons 5,000 miles at 20 kts. 1,050

Complement:

General

General

Of the 24 ships of this class originally projected, it is reported that 20 keels were laid and 17 hulls were launched from 1951 onwards, but only 14 ships were completed and were operational by Dec. 1960. There are two slightly different types of "Sverdlov" class cruisers. The Sverdlov and others have the 37 mm. AA. guns near the fore-funnel one deck higher than in later cruisers. Most ships are fitted for minelaying. Mine stowage is on the second deck.

Construction

Construction

These ships were originally designed for a standard displacement of 12,800 tons and a full load displacement of 17,000 tons.

It is reported that the "Sverdlov" class is limited to 14 units, that "Sverdlov" class cruiser construction was suspended with 6 units remaining partially completed, and that some of these may be completed with a modified armament or with guided missile launchers.

fied armament or with guided missile Guided Missiles In 1961-62 two "Sverdlov" class cruisers were converted with guided weapons. Admiral Nakhimov was fitted with a medium range missile launcher aft, replacing the two gun turrets, and Dzerzhinski was fitted with a close range missile twin launcher aft in place of No. 3 or "X" turret.

Gunnery Gunnery

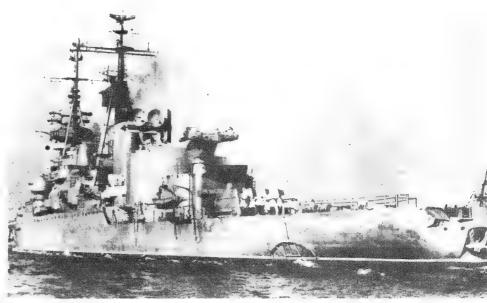
Admirdl Nakhimov has only six
6 inch guns in two triple turrets forward, "X" and "Y" turrets having
been replaced by guided missile
launcher, and Dzerzhinski has only
nine 6 inch guns in three triple turrets, "X" turret having been replaced
by guided missile launcher,

Tarbedges

Torbedoes

Oktyabrskaya Revolutsia and Mur-mansk no longer have torpedo tubes.

Drawing
Port elevation and plan of "Sverdlov"
class without guided missiles. Scale:
128=1 inch.



DZERZHINSKI

1965, Erich Gröner

Appearance
Sverdlov and other ships had their anti-aircraft bridge near the fore-funnel one deck higher than in later ships, Oktyabrskaya Revolutsiya no longer has torpedo tubes, Murmansk has low anti-aircraft bridge near the fore-funnel and no torpedo tubes.

Photographs

Photographs
Photographs of Admiral Ushakov, Aleksandr Suvorov, and Sverdlov appear in the 1953-54 to 1957-58 editions, of Oktyabrskaya Revolutsiya (as Molotovsk) in the 1957-58 to 1959-60 editions (also large photograph showing midship details) and in the 1962-63 edition (port bow oblique view), of Sverdlov (counter view showing minelaying stern) in the 1961-62 and 1962-63 editions, and of Murmansk (as Zhdanov) in the 1957-58 to 1964-65 editions.

Protection

Deep and thick side belts of armour from the fore turret to the after turret, tapering to the bow and the

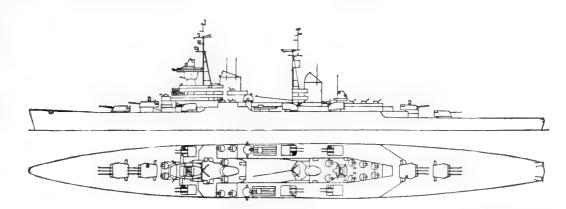
Nomenclature

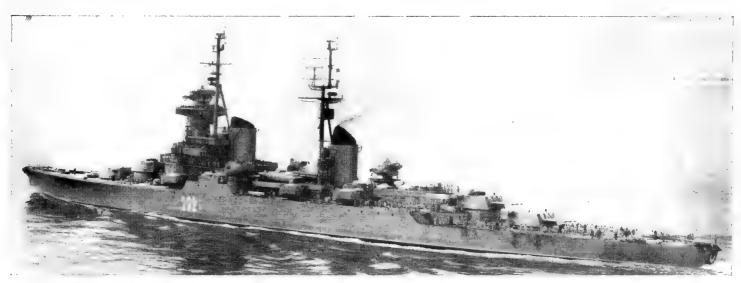
The ship first named Molotovsk was renamed Okty-abrskaya Revolutsiya in 1957, and the ship first named Zhdanov was renamed Murmansk in 1964.

Transfer

Ordzhonikidze of this class was transferred to the Indonesian Navy in Oct. 1962 and renamed Irlan.

The uncompleted hulls of four "Sverdlov" class cruisers were reported to have been broken up at Leningrad.





3 "Chapaev" Class

KOMSOMOLETS (ex-Chkalov)

KUIBYSHEY ZHELEZNYAKOV

Displacement: 11,500 tons standard (15,000

11,500 tons standard (15,000 tons full load)
Length: 656 feet. Beam: 643 feet. Draught: 21 feet
12—6 inch (4 triple); 8—4 inch AA. (4 twin); 28—37 mm. AA. (14 twin)
100 to 200 capacity
Geared turbines with diesels for cruising speeds. 2 shafts. S.H.P.: 113,000=35 kts. Dimensions: Guns:

Mines: Machinery:

Boilers:

3,500 tons 4,500 miles at 20 kts. 834 Oil fuel:

Radius: Complement:

General
Laid down in 1939-40, Launched during 1941-47.
All work on these ships was stopped during the war, but was resumed in 1946-47. Completed in 1948-50, Catapults were removed from all ships of this type.
Zheleznyakov is in reduced status and serves as a training ship. training ship. Gunnery

Gunnery
Turret guns are in separate sleeves allowing i
dependent elevation. Elevation at least 50 degrees.

Nomenclature
Chkalov was reported to have been renamed Komsomolets in 1961

Cruisers-contd.

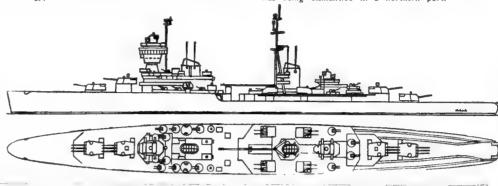
Appearance
These cruisers have heavy director on control tower, These cruisers have heavy director on control tower, pole foremast and a tripod mainmast forward of the after funnel. Vertical funnels, All this class have higher freeboard and longer funnels than ships of the "Kirov" class. They resemble the "Sverdjov" class in several respects, but the forecastle deck breaks abreast the forefunnel instead of at the quarter deck.

It was reported in 1962 that Chapaev, Komsomolets. Kuibyshev and Zheleznyakov would be transferred, two to Egypt and one or two Indonesia. Drawing

Port elevation and plan of "Chapaev" class. Drawn in 1957. Scale: 128 feet=1 inch.

A port quarter view of Zheleznyakov appears in the 1952-53 to 1957-58 editions, and a starbard quarter view of Chapaev in the 1953-54 to 1959-60 editions. Disposals

Frunse is reported to have been discarded for disposal. Late in 1961 it was reported that Chapaev was being dismantled in a northern port.





ZHELEZNYAKOV

1959. Antonov Rogov

2 "Kirov" and 1 "Maksim Gorki" Types

Displacement: 8,800 tons standard (11,500 tons full load)
Length: 613½ (pp.), 626¾ (o.a.) feet. Beam: 59 feet.
Draught: 20 (max.) feet
9—7·1 inch 8—4 inch AA., 16
—37 mm. AA., 6—13 mm. AA.
6—21 inch (2 triple) 8.800 tons standard (11,500 Dimensions: Guns:

Tubes: Mines: Armour:

Machinery:

6—21 inch (2 triple)
60 to 90 capacity
3 in. side, 2 in. deck, 4 in. gunhouses, 4 in C.T.
Geared turbines with diesels for
cruising speeds. 2 shafts. S.H.P.:
110,000=35 kts. (actually less)
6 Yarrow or Normand
2,500 tons
3,500 miles at 19 kts.
734 Boilers. Oil fuel: Radius:

Complement:

General

Design and technical direction of construction furnished by Ansaldo. Of this class Ordzhonikidze under construction at Nikolayev, was wrecked by high explosives before the enemy occupied that port in Aug. 1941. At least one of this type (Maksim Gorki) was badly damaged in the Baltic in Aug. 1941.

Appearance

First Group: Kirou and Malaged 1941.

Appearance
First Group: Kirov and Molotov had very long forecastle, heavy tripod mast stepped abaft forebridge,
light tripod stepped abaft second funnel, very large
funnels. Second Group: Remaining vessels had high
director tower on forebridge, light tripod foremast
abaft bridge, heavy tripod mainmast stepped abaft
second funnel, smaller funnels, and generally lighter appearance.
Photographs

Starboard bow and quarter views of Kirov, showing

KALININ KIROV SLAVA (ex-Molotov)

Builders Komsomoisk Shipyards Putilov D.Y. Marti Yard, Nikolaye

her No. 961, appear in the 1960-61 to 1962-63 editions. Gunnery

Triple guns are mounted in one sleeve and are in-capable of individual elevation. Maximum elevation 40 degrees.

Nomenclature
Molotov was reported to have been renamed Slavia in 1962.

Notes to Drawing
Port elevation and plan of Kirov after conversion.
Drawn in 1957. Scale: 128 feet=1 inch. Transfer

Kaganovitch is reported to have been lent or leased the U.S.S.R. to the Chinese Communist Navy. Disposals

Voroshilov is reported to scrapped. Laid down 1939 Launched Combleted 1947 26 Sep. 1938 1944 1945 1 Dec. 1936 23 Feb. 1939 1934

Maksim Gorki is reported to be disarmed and in a bad state. Kalinin and Slava are no more than training hulks.

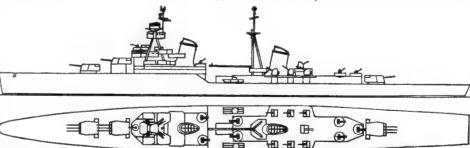
Disposals of Older Cruisers

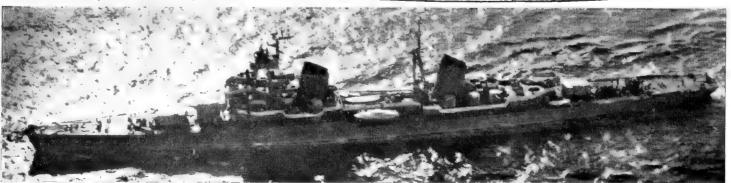
Disposals of Older Cruisers

The very old Russian cruisers Krasnyi Kovkaz (exAdmiral Lazarev) and Krasnyi Krym (ex-Profitern, exSvietlana) were hulked.

The old ex-German light cruiser Admiral Makarov
(ex-Nurnberg), latterly used only as a stationary
training hulk, as she was obosolete and worn out, is
reported to have been demilitarised prior to being
scrapped at the Zhdanov Works in Leningrad.

The old ex-Italian light cruiser Kertch (ex-Stalingrad, ex-Z 15, ex-Emanuele Fillberto Duca D'Aosta)
of similar vitage, was reported to have been lent or
leased by U.S.S.R. to the Rumunian Navy; but in 1961
it was reported she had been scrapped along with the
hulk of Krasnayn Krim.





GUIDED MISSILE ARMED DESTROYERS

4 + "Kashin" Class

No. 11

No. 078 No. 296

Displacement: 4,800 tons standard (6,000 tons full load)
Dimensions: 492×51×19 feet
Guided weapons: 2 twin launchers for surface-to-air missiles in "B" and "X" positions

-85 mm. AA. (2 twin) in "A" d "Y" positions Guns:

Tubes:

4—85 mm. AA. (2 twin) in "A" and "Y" positions
5—21 inch (1 quintuple mounting) amidships
2 twelve barrelled and 2 six barrelled rocket faunchers
4 sets gas turbines. S.H.P.:
100,000=35 kts, A/S weapons: Machinery:

A new class of guided missile armed destroyers with

anti-aircraft and anti-submarine propensities. Four separate towers carrying radar for missile guidance, anti-aircraft direction, search and gunnery direction. Reported to total four completed units, two built in the Baltic and two in the Black Sea, but the class is likely to run into series production.

Photographs

A starboard broadside view of No. 078 appears in the 1964-65 and 1965-66 editions.



KASHIN Class No. 11

1966, col. Breyer

4 "Kynda" Class No. 299 No. 343

VARYAG (621) No. 202 No. 239

Displacement: 4,300 tons standard (5,200 tons full load)

Dimensions: 475×53×19 (max.) feet
Quided weapons: 2 quadruple mountings (1 forward, 1 aft) for surface-to-surface missiles
1 twin launcher for surface-to-air missiles on the forecastle

No 641 No 898

Guns:

-85 mm, AA, (2 twin) -21 inch (2 triple) amidships -12 barrelled rocket launchers Tubes: A/S weapons: Machinery:

on the forecastle

2 sets combined steam and gas
turbines. 2 shafts, S.H.P.: 85,000

=35 kts. 4 high pressure

Boilers: Complement:

General

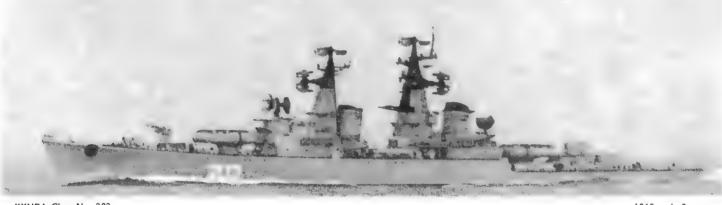
Photographs

No. 898 was laid down in June 1960, launched in A starboard broadside aerial view of No. 898

Apr. 1961 at Zhdanov Shipyard, Leningrad, and com- appears in the 1963-64 and 1964-65 editions.

pleted in June 1962. The second ship was launched in Nov. 1961 and fitted out in Aug. 1962. Two enclosed towers, instead of masts, stepped forward of each raked funnel. Two screws and two rudders, Helicopter landing apron on the stern.

Serial Numbers
"'Kynda" class destroyers bearing all the numbers
listed above have been observed, but there are believed
to be only four ships.



KYNDA Class No. 202

1965, col. Brever

10 "Krupny" Class

No. 185 No. 229

No. 372 No. 526

No. 700 No. 703

Displacement: Dimensions:

Guided weapons:

A/S weapons: Machinery:

Guns:

3,650 tons standard (4,650 tons full load)
453×44×16} feet
2 launchers (1 forward, 1 aft) for surface-to-surface missiles
16—57 mm. AA. (4 quadruple), 1 forward, 1 aft, 2 amidships
2 triple-tube torpedo launchers
Geared steam turbines, 2 shafts,
5.H.P.: 80,000=34 kts,
4 high pressure water tube

Boilers: Complement:

4 high pressure water tube 360

General

General
A class of flush-decked destroyers designed to carry guided missiles, Helicopter spot landing apron on the stern. Initial construction in 1958 at Leningrad, There were originally to have been twelve vessels of this class, but construction of the type is reported to have been discontinued in favour of later types, and the class is believed to number ten units.

A port broadside aerial view of No. 526 appears in the 1961-62 to 1963-64 editions, a port broadside surface view of No. 700 in the 1962-63 and 1963-64 editions, a starboard bow surface view of No. 700 in the 1962-63 to 1964-65 editions, and a starboard broadside view in the 1963-64 to 1965-66 editions.

New Construction

A new class of destroyers is reported to be under construction at the Zhdanov Shipyard, Leningrad



KRUPNY Class No. 372

1965, Captain Aldo Fraccaroli



KRUPNY Class No. 703

Guided Missile Armed Destroyers-contd.

6 "Kildin" Class

No. 303

No. 925

Displacement:

3,000 tons standard (4,000 tons

full load) 426½×423×15½ feet

Guided weapons: 1

Guns: A/S weapons:

Machinery:

1 auncher for surface-to-surface missiles aft 16—45 mm. AA. (4 quadruple) 2—16 barrelled rocket launchers on the forecastle Geared turbines. 2 shafts. S.H.P.: 80,000=35 kts.

Boilers: Complement: 4 high pressure 300

General

General

Large destroyers with the "Kotlin" type hull, but redesigned as guided missile armed destroyers with a launcher installed in place of the after gun mountings. Identified by NATO designation as the "Kildin" class.



KILDIN Class

I "Kotlin" SAM Class

No.165

No. 935

Displacement:

2,850 tons standard (3,885 tons full load) 425 $(o.a.) \times 41\frac{1}{2} \times 16$ (max.)

Dimensions:

 $(o,a.)\times 41\frac{1}{2}\times 16$ (max.)

Guided weapons:

Guns:

425 (o.a.)×41½×10 (max.) feet
1 launcher for surface-to-air missiles aft
2—3·9 inch d.p. (1 twin); 4—57 mm. AA. (1 quadruple)
3—21 inch
6 side thrown depth charge projectors

Tubes: A/S weapons;

Mines.

Machinery:

o side thrown depth charge jectors
Fitted for laying
Geared turbines. 2 s
S.H.P.: 80,000-36 kts.
4 high pressure shafts.

Boilers:

Complement: General

General

"Kotlin" Class modified with a surface-to-air guided missile launcher in place of the main twin turret aft and the secondary anti-aircraft guns reduced to one quadruple mounting.

Serial Numbers

There is believed to be only one ship of this SAM "Kotlin" Class, but two hull side numerals have been observed (see photographs) which may have been borne at different times.

Photographs

A starboard bow view appears in the 1963-64 to

A starboard bow view appears in the 1963-64 to 1965-66 editions.



KOTLIN SAM Class No. 165



KOTLIN SAM Class No. 935

1966, col. Breyer



KRUPNY Class No. 700 (see previous page)

DESTROYERS

30 "Kotlin" Class

BESSLEDNYI BURLIVYI NASTOYCHIVIY **PLAMENNYI**

SPRAVETLIVYI SVETLIVYIARE VDOKHNOVENNYII VOZMUSHCHENNY

No. 32 No. 75 No. 77 No. 78 No. 79 No. 82

No. 86 No. 95 No. 487 No. 502 No. 774 No. 858

Displacement: Dimensions:

2.850 tons standard (3.885 tons full load) 425 (o.a.) \times 41½ \times 16 (max.)

feet 4—3.9 inch d.p. (2 twin); 16—45 mm, AA, (4 quadruple) 10—21 inch 6 side thrown depth charge pro-Guns:

Tubes: A/S weapons: jectors Jectors
80 capacity
Geared turbines. 2 shafts.
5.H.P.: 80.000=36 kts.
4 high pressure
285

Mines:

Machinery:

Boilers:

Complement:

General'

General Improved versions of the "Tallin" type with similar hulls but differing features. This class of fast anti-aircraft and anti-submarine destroyers, built in 1954-57, were designed for mass production. Nastoychiviy means Persistent.

Persistent. Modernisation

Many units of the "Kotlin" class have been modernised, with extensive modifications in anti-submarine and anti-aircraft armament. Several of the class are fitted with a helicopter platform abaft the after mounting. One ship is fitted with a surface-to-air twin missile launcher aft, installed atop a deckhouse in place of the removed after guns; with missile radar and tower fitted forward of the after funnel. She is the only one of her type and is probably experimental.



KOTLIN Class No. 858 with helicopter platform aft

1965, col. Breyer



KOTLIN Class No. 0.487

1965, Skyfotos

Anti-Submarine Warfare

The six depth charge throwers in Nastoychiviy are welded to the decl, three on each beam at the stern, affording only transverse throw. They are apparently charged from deck magazines.

Photographs
Another photograph of a "Kotlin", a port near broadside surface view at sea, appears in the 1957-58 to 1960-61 editions, and starboard broadside view of No. 82 in the 1958-59 to 1964-65 editions.



KOTLIN Class No. 774

Skyfotos

"Tallin" Prototype

NEUSTRASHIMYI

Displacement: Dimensions:

standara (4,300 tons full load) see General 433 (o.a.)×44×16 feet 4—3.9 inch semi-automatic d.p. (2 twin); 16—45 mm. AA. (4 quadruple) 10—21 inch (2 quintuple)

Tubes: A/S weapons:

3.200 tons standard (4,300 tons

10-21 inch (2 quintuple)
2 depth charge rocket launchers

Mines: Machinery: 70 to 90 according to size and type Geared turbines. 2 shafts. S.H.P.:

Boilers: Oil fuel: Radius:

100,000=38 kts. 4 water tube 1,000 tons 2,500 miles at 18 kts. Complement: 340

General

A multi-purpose anti-aircraft, anti-submarine and minelaying flushdecked prototype destroyer for fleet escort and flotilla leader duties. Neustrashimyi means Unfearing.

Gunnery

The 3.9 inch (100 mm.) guns in two twin turrets are similar to those mounted as secondary armament in the "Sverdlov" class cruisers, including firing directors and control position, fully stabilised, forming a part of the bridge. This was the first time such an armament had been contrived in a ship of destroyer size, an experiment in top weight.

Class

It is reported that there is only a single "Tallin"

It is reported that there is only a single "Tallin" class ship, a prototype for the "Kotlin" class, but she has had several different pennant numbers, including No. 76, see photograph in the 1956-57 to 1960-61



NEUSTRASHIMYI

1961, Skyfotos

Destroyers-contd.

55 "Skory" Class

BESSMENNYJ

BEZUKORIZNENNYJ

Normally in the Black Sea

OTCHAYANNYJ OTVETSTVENNYJ

OZHESTOCHENNYJ OZHIVLENNYJ

Normally in the Arctic

SERIDTYJ SERIOZNYJ SMELYJ SMOTRYASHCHII SOKRUSHITELNYJ SOLIDNYJ SOVERSHENNYJ

SPOSOBNYI STATNYJ STEPENNYI STEPENNTI STOJKYJ STREMITELNYJ SUROVYJ SVOBODNYI

Normally in the Baltic

VDUMCHIVYI

VRAZUMITELNYI

Normally in the Far East

Displacement:

2.600 tons standard (3.500 tons

Dimensions:

Guns:

2,600 tons standard (3,500 tons full load)
393½ (pp.), 420 (o.a.)×41×
15 feet
4—5:1 inch (twin), 2—3 inch
AA., 7—37 mm. AA. (Some
have 8—37 mm. AA, in twin
mounts). See Modernisation
10—21 inch

Tubes: A/S weapons; Mines;

4 D.C.T. 80 capacity

Machinery:

Geared turbines, 2 S.H.P.: 70,000=36 kts. 4 high pressure 4,000 miles at 15 kts. 2 shafts.

Boilers: Radius:

260 Complement:

General

General

There were to have been 85 destroyers of this class, but consruction beyond 75 units is reported to have been discontinued in favour of later types of destroyers, and the number has been further reduced to 55 by transfers to other countries, translations to other types, and disposals.

Serlal Numbers

There are now tactical "500 and 700" series. Numbers observed include 580, 787 and 789.



SVOBODNYI (bearing No. 787)

Gunnery

They are equipped with modern target finding and gun sighting radar for the 5-1 inch guns in two twin turrets, and they also carry depth charge throwers.

Nomenclature

The names of "Skoryi" class destroyers are apparently based on their fleet assignment, Those in the Black Sea have names beginning with B, those in the Northern Fleet have names beginning with O, those in the Pacific Fleet have names beginning with V. This is the only class to which names appear to be applied to indicate fleet designation. Whether the same is altered with a change in fleet assignment is not clear, but it seems that this might be the case when the change is permanent. Osmyslennyi means "Sensible" and Ostervenelyi means "Frenzied".

Appearance

There are three differing types in this class, the antiaircraft guns varying with twin and single mountings; and two types of foremast, one vertical with all scanners on top and the other with one scanner on top and one on a platform half way.

Modernisation

Modernisation

Many ships of the "Skoryi" class have been modified under a fleet rehabilitation and modernisation programme with extensive alterations to anti-aircraft armament, electronics, and anti-submarine weapons. A number of ships have had "A" turret suppressed. with A/S launchers in lieu and two twin 57 mm. AA. guns abreast the bridge, director removed and local control fitted aft for "Y" mounting.

1960

control fitted aft for "Y" mounting. Photographs
Photographs of Stepennyl, Sposobnyl and Surovyl appear in the 1954-55 to 1957-58 editions, a large broadside view of Smotryahchy in the 1957-58 to 1959-60 editions, a starboard bow view of Ozhestochonnyl in the 1957-58 to 1962-63 editions, and a port broadside view of Otchaiannyl in the 1958-59 to 1962-63

view of Otchaiannyi in the 1958-59 to 1962-63 editions, Transfers

Of this class Skoryi and Smetlivyi were transferred to the Polish Navy in 1957-58. Two sister ships were transferred to the Egyptian Navy in 1956. Four more units were transferred to the Indonesian Navy in 1959.



SVOBODNYI (bearing No. 14)

1957, Skyfotos



1957

5 "Mirka" Class

No. 67

No. 105

Displacement: Displacement Dimensions: Guns: Tubes:

circa 900 tons light
262 (o.a.)×29½×9½ feet
4—76 mm, AA (2 twin)
5 anti-submarine
4—12 barrelled rocket launch-

A/S weapons;

ers. Machinery:

Gas turbines=28 kts

General

No. 4

A new class of escorts, successor and anti-submarine version of the "Petya" class, with same size, and essentially of similar design, but with some of the teething problems eradicated. Two built in the Baltic, three others built at Kalingrad in 1964.



"Mirka" Class No. 166

ESCORTS

1966

25 "Petya" Class

Displacement:

No. 481 1,050 tons standard (1,200 tons

Dimensions:

full load) $250 \text{ (w.l.)}, 262\frac{1}{2} \text{ (o.a.)} \times 32 \times 9\frac{3}{4}$

Guns:

feet feet
4-85 mm, (2 twin mountings)
5-21 inch
4-16 barrelled rocket laumchers

Tubes: A/S weapons: Mines:

Machinery:

2 minerails
2 diesels. B.H.P,: 4,000; 2 gas turbines. H.P.: 10,000. 2 shafts = 30 kts.

General

A new class of escort patrol vessels with a low wide funnel. The first ship of the type is reported to have been completed in 1961. Built by Kaliningrad, Nil olaiev.



"Petya" Class No. 4

1965, col. Breyer

12 "Kola" Class

DOBLESTNY DOSTOINI DRUSHNY DSKARKI

DZERSKI DZGUTSHI DZIVUTSHI DZOSTKI

Displacement:

1,500 tons standard (2,000 tons

Dimensions:

Guns:

Tubes: A/S weapons: Machinery:

1,500 tons standard (2,000 tons full load)
295 (pp.), 305 (o.a.)×32½×
11½ feet
4-3-9 inch AA. (single); 4—
37 mm. AA.
3—21 inch
Depth charges and racks
Geared turbines 2 shafts.
5.H.P.; 30,000=31 kts.

Boilers:

190 Complement:

General

In design this class of flushdecked destroyer escort appears to be a combination of the former German "Elbing" type torpedo boat destroyers, with a similar hull form, and of the earlier Soviet "Birds" class frigates. The four 3-9 inch guns were mounted as in



"Kola" Class No. 652

the "Gordyi" class destroyers, It is reported that eight of this class are in the Baltic and four in the Far East.

Nomenclature

last five names are also rendered as Zharki

(Dskarki), Zherski (Dzerski), Zhgutsh (Dzgutshi), Zhivutshi (Dzivutshi) and Zhostki (Dzostki). Nos. 622, 632, 639 and 652 were reported in the Far

50 "Riga" Class

No. 162 No. 168 No. 202 No. 324 No. 375 No. No. 645 No. 582 No. 642 No. 54

Displacement:

1,200 tons standard (1,600 tons

Dimensions: Guns:

1,200 tons standard (1,600 tons full load)
278\(\frac{1}{2}\) (pp.), 295 (o.a.)\(\times 31\)\\
11 feet
3—3 9 inch d.p. (single); 3—37 mm, AA.
3—21 inch

Tubes: 4 depth chage projectors
Fitted with mine rails
Geared turbines. 2 shafts.
S.H.P.: 25,000=28 kts. A/S weapons: Mines Machinery:

Boilers: General General Successors to the "Kola" class frigates, of which they are lighter and less heavily armed but improved versions. A photograph of No. 645 appears in the 1956-57 to 1962-63 editions, and of No. 168 in the 1962-63 to 1965-66 editions.

1962-63 to 1965-66 editions.

Appearance
This class is divided into two types with different schemes of masting construction, see photographs.

Disposals of Older Frigates
The three frigates of the Improved "Birds" class, Albatros, Chaika (Seagull), and Krechet (Buzzard); the seven frigates of the "Birds" class, Berkut (Golden Eagle), Grif (Griffin), Köndor, Korshun (Kite), Orel (Eagle), Voron (Raven) and Yastreb (Hawk); and the two Ansaldo type vessels, Dzerzhinski (ex-P.S. 8) and Kirov (ex-P.S. 26), have been deleted from the list on account of age, obsolescence or being worn out. They are of little fighting value, and if serving at all, can only be used for training or auxiliary purposes.



Later "Riga" Class No. 375

1966 col. Brever



"Riga" Class No. 656

Sergei Romanov

Disposals of "Otlichnyi" Class Destroyers

The nine destroyers of the "Otlichnyi" class,
Obraztsovyi, Odarenni, Ognevol, Opasnyi, Osmotritelnyi, Otkhotlivyi, Otlichnyi, Otvazhnyi and Ozornoi
were deleted from the list in 1966. This class is of
little fighting value due to age and obsolescent equipment. Most of the ships, if serving at all, are probably
used for training or auxiliary purposes.

Disposals of Older Destroyers

The eight destroyers of the "Ryanyi" class, Razyash-chyl, Redki, Rekordnyl, Reshitelnyl, Reski, Resvi, Revostnyl and Ryanyi; the eight destroyers of the "Silnyi" class, Silnyl, Slavnyl, Storozhevol, Strashnyl, Storgi, Stroinyl, Svirepyl and Vice-Admiral Dzozd (ex-Stolki); the five destroyers of the "Gromki" class, Gremyaschyl,

Gromki, Groznyl, Grobyashchyl and Steregushchyl; and the three remaining destroyers of the "Leningrad" class, Baku, Leningrad and Minsk, have all been deleted from the effective list on account of age, obsolescence or being worn out. They are no longer of any considerable military value, and if serving at all, can only be used for training or ancillary purposes.

Nuclear Support Type

"Ugra" Class

No. 82 Displacement:

6,000 tons light (9,000 tons full

food) estimated 370 (pp.), 420 (o.a.) \times 65 \times 20 Dimensions:

feet 8-85 mm. (4 twin) 2 forward on centre line, 2 athwart after

superstructure
Provision for helicopter
Diesels, 2 shafts, B.H.P.: 7,000
= 17 kts. Aircraft. Macninery:

General

Support and escort ships of the maintenance and repair, supply and depot type probably for servicing nuclear powered submarines. Built on warship lines. Equipped with workshops and staterooms. Provided with a helicopter platform. Fitted with comprehensive radar. Carries a large derrick to handle torpedoes and warsheads. Has mooring points in hull about 100 feet apart, but has side doorways as well, possibly for coastal craft and submarines.

Missile Supply Type

"Lama" Class

No. 44 Displacement:

5,000 tons light (7,000 tons full load) estimated 330 (pp.), 370 (o.a.) \times 60 \times 19

Dimensions:

Guns:

Machinery:

feet 8—57 mm. AA. (2 quadruple) 1 forward, 1 aft Diesels. 2 shafts. B.H.P.: 5,000

General

Diesels. 2 = 15 kts.

General
Support and escort ship of the depot and freighting type. Her features indicate a possible missile supply role. Engines sited aft to allow for a very large and high hangar or hold amidships for carrying missiles or weapon spares. The main erection is about 12 feet high above the main deck. There are doors at the forward end with rails leading in. This is surmounted by a turntable gantry or travelling cranes for transferring armaments to combatant ships.

PM 131

PM 131 Displacement:

5,000 tons light (7,000 tons full

Dimensions:

load) 330 (pp.), 370 (o.a.)×60×19

330 (pp.), ore feet 8—57 mm, AA. (2 quadruple) 1 on the forecastle, 1 on the break of the quarter deck Diesels. 2 shafts. B.H.P.: 5,000 = 15 kts.

Machinery:

General

Support and escort ship for serving missile armed ships. Built on merchant ship lines, and identical in design with No. 44, see above, but numbered in a different series for other deployment. Can apparently be used for salvage and towing. Mooring points along the hull for low vessels such as submarines to come alongside. There appears to be a turntable on the deck, which is built up 2 feet above the main deck. The two cranes are in the stowed position and there appear to be pulleyed lifting arrangements, apparently intended to service the well deck and overside. The well declis about 40 feet long, enough for a missile to fit horizontally before being lifted vertically for loading in submarines. General

Oceangoing Support Type 6 "Don" Class

FEDOR VIDYAEV KOTELNIKOV MAGOMET GADZHIEV No. 105 No. 549 No. 701

Displacement:

Dimensions:

Guns: Aircraft:

701

80 capacity Diesels. Speed=20 kts.

Machinery:

300

Complement: General

General
Support ships. The design is interesting as a hybrid. It has been described as cruiser, frigate, minelayer, training ship, escort vessel, supply ship, and depot ship, The normal displacement is estimated at 5,000 tons. Kotelnikov, submarine tender, visited Stockholm in 1962 with three submarines.

1962 with three submarines.

Photographs

Another photograph of the "Don" class, showing a fully gunned ship forward and aft instead of the modified version with helicopter deck illustrated herewith, appears in the 1960-61 to 1964-65 editions.

Oceangoing Escort Type "Purga" Class

No. 551

2,250 tons standard (3,000 tons Displacement:

2,250 tons standard (3,000 tons full load)
325×40×14 feet
4—3·9 inch (single); 8—37 mm.
AA. (4 twin), 4—25 mm. AA. (2 twin)
50 capacity
Diesel. Speed=18 kts. Dimensions: Guns:

Mines:

Mines:

Machinery:
Diesel. Speed=18 kts.

Complement:
200

General
Sturdy oceangoing vessel of the frigate or large sloop
type equipped for minelaying and adapted as gunnery
and training ships. These hybid vessels are fitted with
directors similar to those in the "Riga" class frigates.

SUPPORT SHIPS



No. 82

1964. Skyfotos



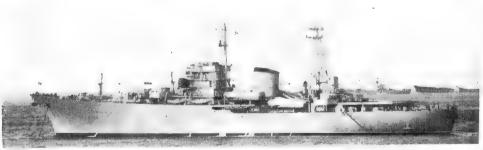
No. 44

Added 1964



PM-131

1964, Skyfotos



"Don" Class No. 701

Added 1965, courtesy Mrs. Ruth Buckler



No. 551

FLEET MINESWEEPERS

T 514

30 "T 58" Class

Displacement: Dimensions:

600 tons standard (700 tons full load) 220×29½×9 feet 4-45 mm, AA. Diesels, 2 shafts. Speed=18 kts.

Guns: Machinery:

General

eneral

A new class of fleet minesweepers built from 1959 onwards, It is reported that
the "T 58" and "T 43" classes together numbered 210 ships. Conversion

Conversion

Three of this class have been converted to submarine rescue ships with armament and sweep gear removed.



T 58 Class

Added 1964

				140 "T	43" Cla	SS				
T	43 54 55 56	T 57 T 60 T 65 T 66	T 74 T 76 T 80 T 91	T 92 T 95 T 96	T 115 T 129 T 157	T 306 T 333 T 358	T	512 533 565 648	T	692 801 802 864
•	30	Displaceme Dimensions Guns:	nt:	200×27½×9 4—37 mm.	andard (600 9 feet AA., 8—13 shafts Spee	mm. AA	load) . M.G.		•	004

General
A handy type of moderately fast fleet minesweepers built in 1948-57 in shipyards throughout the Soviet Union. Of 175 ships ten were transferred to Poland, eight to Albania, six to Egypt, four to Indonesia, three to Bulgaria, and two to Syria.

Conversion

Some of this class have been converted into radar pickets (see photograph above).



"T 43" Class No. 55 as Radar Picket

1965, col Brever



Disposals of Older Fleet Minesweepers

Of the 34 steel hulled fleet minesweepers of the "Admirable" class transferred from the U.S.A. to the U.S.S.R. during the Second World War under the lend-lease programme. 21 were destroyed, 4 lost and 9 purchased outright by the U.S.S.R.; but the latter were deleted from the list in 1963 as they are no longer operational in their original roles. Four were converted to surveying vessels named Gidrofon, Gidromtr, Gidroscop and Gorizont, see later page.

The 24 fast minesweepers of the Modified "Polhukhin" class, the six fast minesweepers of the "Polhukhin" class, the two ex-German fleet minesweepers of the "M 43" type, the 29 ex-German fleet minesweepers of the "M 40" type, the 14 ex-German fleet minesweepers of the "M 35" type, the 32 old Soviet fleet minesweepers of the "Tral" ("Fugas") class, and the 20 of the ex-"PSK" type, were all deleted from the list in 1963 as mone are still considered operational in their original roles. See photographs and particulars in the 1962-63 and earlier editions.

MINELAYERS

General

The Soviet Navy is capable of a considerable mine-laying effort. Apart from specialised minelayers, most cruisers and destroyers, some submarines and other craft were fitted for minelaying which has always been a highly specialised branch of the Soviet Navy.

Disposals of Minelayers

The old minelayers Voroshilovsk, Murman, latterly used as a survey ship, Elizabeta (ex-Marty, ex-Shtandart), former Imperial Yacht, and the former Japanese Kamishima were deleted from the list in 1963, as they are no longer operational. Ural (ex-Felix Dzerzhinski) is reported to have been returned to the Merchant Navy. The mining tenders MU 41, 42, 43, 44, 45, 46, 48, 50, 51, 52, 53 asd 54 were also deleted. See photographs and particulars in the 1962-63 and earlier editions.

COASTAL ESCORTS

"Poti" Class

Displacement: Dimensions: Guns:

350 tons standard 200×28×10 feet 2—57 mm, AA. (1 twin mounting) 4 anti-submarine
2—12 barrelled rocket launchers
Gas turbines. Speed=28 to 30 kts. Tubes: A/S weapons: Machinery:

General

This new class of coastal escort vessels or patrol vessels of the submarine chaser type is reported to be basically similar in characteristics to the "Petya" class. The prototype ship is reported to have been built in 1961. Disposals of Older Escorts

Disposals of Older Escorts

The 13 fast escorts of the "Shtorm" Group: Molniya, Serp and Zarnitsa ("Improved Shtorm" class). Burun, Grom, Metel and Vyuga ("Burun" class). Groza, Smerch and Uragun ("Groza" class) and Taifun, Tutcha and Vikhr ("Taifun" class) were deleted from the list in 1963, being of no further military value on account their age.



"Poti" Class

1966, col. Brever

No. 639

Displacement: Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Complement: 215 tons light, 250 tons normal 138 (pp.), 147 (o.a.) \times 20 \times 10 (max.) feet 4-25 mm. (2 twin mountings) 4 five-barrelled ahead throwing rocket launchers 3 diesels. B.H.P.: 3,500=28 kts.

311

100 "S.O.1" Class

General

Built from 1957 to 1960. Apparently the design is an enlarged version of the exU.S. "110-foct" class of SCs built during the Second World War, Steel hull.



"S.O.1. Class No. 639

1965, col. Breyer



"S.O.1." Class

1963

150 "Kronstadt" Class

No. 265 No. 356

No. 357 No. 360

No. 361 No. 497

No. 541 and others

Displacement: Dimensions: Guns: A/S weapons: Machinery: Complement: 300 tons standard (350 tons full load) $167\frac{1}{2}\times19\frac{1}{3}\times9$ feet $1-3\cdot9$ inch, 2-37 mm. AA., 3-20 mm. AA. Depth charge projectors Diesels. 2 shafts.=23 kts.

40

General

Built in 1948-56, Flush decked, large squat funnel, slightly raked, massive block
bridge structure. An improved version of the "Artillerist" class. There appear to be
two types of this numerically large class of coastal escort vessels. The latest type
has a more effective anti-submarine armament. The earlier type carries mines.



"Kronstadt" Class No. 497

Disposals of Older Patrol Vessels

Disposals of Older Patrol Vessels

The 11 patrol vessels or submarine chasers of the 'Artillerist' class, Artillerist,

Eletrik, Kirovets, Lyotchik, Mashinist, Mekhanik, Motorist, Pilot, Shturman,

Tryumnyl and Turbinist, and the 3 old patrol vessels of the "Rubin" class, Brilliant,

Rubin and Sapfir, were deleted from the list in 1963, being no longer operational.

COASTAL MINESWEEPERS

"Vanya" Class

General

A new, numerically large, class of coastal minesweepers of recent construction with wooden hulls reported to be basically similar to the British coastal minesweepers of the "Ton" class, but armed with two 25 mm. AA. guns.

"Yurka" Class

300 tons standard 153×27×8 feet Displacement: Dimensions: 4—25 mm. A/ Speed=15 kts. Guns

General

Reported to be basically similar to the British coastal minesweepers of the "Ton" class, but constructed of steel.

50 "Sasha" Class

No. 118

180 tons standard (250 tons full load) $147\times20\times7$ feet 1—85 mm, d.p.: 4—25 mm. AA, (2 twin)

Guns: Machinery:

Displacement:

Dimensions:

Diesels. Speed=18 kts.

General

General

Basically similar to British "Ham" class inshore minesweepers, but of steel construction. This series did not run into the number at first anticipated, construction having been discontinued in favour of later types.



"Sasha" Class No. 118

1965, col. Breyer

80 "T 301" Class

T 371 Series

130 tons standard (180 tons full load) $100\times16\times4\frac{1}{2}$ feet 2—37 mm, AA., 2—25 mm. AA. Diesel. 2 shafts. B.H.P.; 480=10 kts. Displacement: Dimensions: Guns: Machinery: Complement; 30

General

Built from 1946 to 1956. Nos. T 341, 356, 376, 442, 459, 460 and others. Several
units of this class are reported to have been converted to surveying vessels, and
many have been adapted for other purposes. A number of the older vessels have
been relegated to port duty and auxiliary service.

There are two different types of the "T 301" class, the "T 371" group, and the
"T 460" group with raking funnel cap (see top photograph).



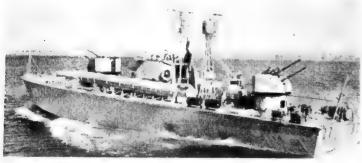
No. 223, "T 460" Series

1962

T 460 Series



T 371 Series



"P 6" Class (see col. 2)

1966, col. Brever

MOTOR TORPEDO BOATS

"Shershen" Class

circa 150 tons $\begin{array}{l} \text{131}\frac{1}{2}\times23\times6\frac{1}{2} \text{ feet} \\ 4-25 \text{ mm. AA. } (2 \text{ twin}) \\ 4-21 \text{ inch (single)} \\ \text{Gas turbines. Speed}=40 \text{ kts.} \end{array}$ Displacement: Dimensions: Guns: Tubes

Machinery:

These large torpedo boats have the same basic hull and layout as the "Osa" class missile patrol boats, but with tubes on the launcher sites and gas turbines instead of diesel propulsion.



"Shershen" Class

1966, col. Brever

"P 12" ("PA 6") Class

Displacement: Dimensions: Guns:

73 tons 82×20×5½ feet 4—25 mm. AA. (2 twin) 2—21 inch H.P.: 5,000=42 lits, Tubes: Machinery:

General

No. 143

new class of motor torpedo boats fitted with hydrofoils, Launched in 1961. Armament varies, "P 10" ("PA 5") Class

Displacement: 60 tons 85½×20×6 feet 4—25 mm. AA. (two twin) 2—21 inch Dimensions: Guns:

Tubes: Machinery: Gas turbines, Speed=47 kts.

General

Reported to have been built since 1961. Armament varies. Can carry 4-21 inch torpedo tubes and 2-25 mm. AA. guns alternatively.

"P 8" ("PA 4") Class

55 tons 85½×20×6 feet 4—25 mm. AA. Diesel engines. B.H.P.: 2,000=42 kts. Displacement: Dimensions: Guns: Machinery:

General

A numerically large class of medium motor torpedo boats with aluminium hulls. Launched from 1951 to 1958.



No. 321

1966, col. Borg

"P 6" ("PA 3") Class

50 tons 82×163×53 feet 4—25 mm. AA. 2—21 inch Displacement: Dimensions: Guns: Machinery: Speed=40 kts.

General

A medium type of motor torpedo boats. Launched during 1956-1958. All capable of being converted into gunboats,



No. 814

1965, col. Breyer

"P 4" ("PA 2") Class

45 tons 82×16¾×5½ feet 2—25 mm. AA. Speed=40 kts. Displacement: Dimensions: Guns: Machinery:

An intermediate type of motor torpedo boats, Launched during 1952-1958, Have been interchanged as gunboats.

The smaller motor torpedo boats of the "PB" and "P2" classes were deleted from the list in 1966.

MISSILE PATROL BOATS

50 "Osa" Class

TAMBOVSKYI KOMSOMOL Displacement:

No 183 No. 85

Dimensions: Guided weapons: Guns: Machinery:

160 tons standard (200 tons full load) 121 $\frac{1}{3}$ (pp.), 131 $\frac{1}{2}$ (o.a.)×28×6 $\frac{1}{2}$ feet 4 large hood type missile launchers in two pairs abreast 4–25 mm. (2 twin, 1 forward, 1 aft) 3 diesels. B.H.P.: 4,800=35 kts.

These later boats, built in 1961-62, have a larger hull and four launchers in two pairs as compared with one pair in the MTB conversions. They are reported to have a surface-to-surface missile range of about 15 miles.



"Osa" Class

1963

No. 745

50 "Komar" Class

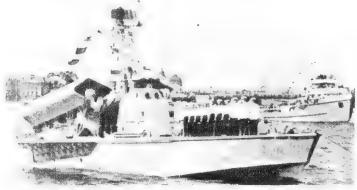
No 747

Displacement: Dimensions: Guided weapons: Machinery:

75 tons standard (100 tons full load) 88 $(o.a.)\times21\times6$ feet 2 launchers for missiles of 15 miles range 2—25 mm. AA. (1 twin forward)

25 mm. AA. (1 twin forward diesels. B.H.P.: 4,800=40 kts.

General A new type of boats converted from "P 6" class motor torpedo boats. Fitted with two surface-to-surface launchers aft in a hooded casing approximately 45 degrees to the deck line. Built in 1960-61.



"Komar" Class No. 747

1965, col. Brever

DIRECTION TRAWLERS

AMPERMETR AMTR BAROGRAPH BAROMETR

GIROSKOF INCUCALNS IZMIRITEL

KRENOMETR LINZA LOTLIN LOTZMAN

OLOICHAN OLONEC OSTROV REDUCTOR

TALIKU USMA VERTIKAL ZELUPE ZOND

Measurement-

684 tons gross, 226 tons net (Maksun, Sokol); 502 tons gross, 197 tons net (Oloichan, Ostrov, S.R.T.M. 8422); 334 tons gross, 89 tons net (Isvalta, Usma, Zelupe); 293 tons gross, 88 tons net (Incukalno, Taliku, S.R.T. 209, S.R.T. 222, GS 34, 36, GS 43, 46, 47, GS 555 GS 55) Length: 165 feet (ships vary)

Dimensions:

General General

Reported to be fitted with electronic interception equipment, with a layout designed for intelligence collection. A considerable number of observation trawlers, equipped with radio aerials and direction-finding apparatus have been sighted by British and American warships during international combined sea and air exercises.



MUKSUN

1965, courtesy Mr. Michael D. J. Lennon

Disposals of Motor Gunboats and Patrol Boats
Of the motor gunboats of the "1125", Improved "1125", "BK" and Improved "BK" types, and the patrol boats of the "Mb 4" and "Mb 5" types, the surviving units were deleted in 1966, as they are obsolete, over age, worn out, non-operational or used for port or auxiliary purposes.

LANDING SHIPS

"Polnocny" Type

Displacement:

900 to 1,000 tons $246\times39\frac{1}{2}\times9\frac{1}{4}$ feet Rocket projector Diesels, B.H.P., 4,000=15 kts.

Dimensions: Guns: Machinery:

A new type of amphibious vessel basically similar to the U.S. medium landing ship, rocket (LSMR) type, Can carry 8 to 10 tanks.



"Polnocny" Type

1966

"MP 8" Type

Displacement: Dimensions: Guns: Machinery:

1,200 tons $236\frac{1}{4}\times36\times13$ feet 4—57 mm. (2 twin) Diesels. Speed=15 kts.

A new type of landing ship with a short and low quarter deck abaft the after castle and a waist between the gun mounting before the bridge and the gun mounting on the high forecastle. Can carry 8 to 10 tanks.

"Bira" (MP 6) Type

Displacement:

Dimensions: Guns: Machinery:

1,800 tons $246\times40\times10^{\frac{1}{2}}$ feet 4-47 mm. (1 quadruple) Diesels. Speed=10 kts.

General

Former freighters of the "Bira" class. Two masts, one stepped from the super-structure aft and one in the forecastle. King ports in the bandstand on the forecastle has two pairs of barrels in the vertical plane. Can carry 8 to 10 tanks.

LANDING CRAFT

"MP 10" Type

Displacement:

Machinery:

420 tons $\begin{array}{ll} 157\frac{1}{2}\times19\frac{3}{2}\times6\frac{1}{2} & \text{feet} \\ \text{Diesels. Speed} = 10 & \text{kts.} \end{array}$

General

A new type of landing craft basically similar to the British LCT (4) type in silhouette and layout. Can carry 4 tanks.

"Kumos" (MP 4) Type

Displacement: Dimensions: Guns:

800 tons $180\frac{1}{2}\times23\times9$ feet 4—25 mm. (2 twin)

Of the small freighter type in appearance. Two masts, one abaft the bridge and one in the waist, Gun mountings on poop and forecastle. Can carry 6 to 8 tanks.

"MP 2" Type

Displacement: Dimensions: Guns:

Machinery: General

700 tons $197\times29\frac{1}{2}\times8\frac{1}{4}$ feet 4—25 mm. (2 twin) Diesels. B.H.P.: 1,200=16 kts.

Basically similar to the British LCT (8) type. Gun mountings on after shelter deck abaft funnel and on forecastle. Can carry 6 to 8 tanks.

Soviet LCT Type

Displacement: Dimensions:

Machinery:

300 tons 154×39×6½ feet Speed=11 kts.

148

Speed=10 kts

55 113

A standard type of tank landing craft, basically similar to the British LCT type.

Soviet LC Type

115 Displacement:

Dimensions:

146

250 150 tons 115×36×5 feet

946 964

Machinery:

A utility type corresponding to the United States LCU type, Carry three tanks

Disposals

Disposals

Of the war-built landing craft; three ex-Italian MZ type; 18 ex-German AFP type; and 46 ex-German MFB-A/C type (see particulars in the 1965-66 and earlier editions) many are reported to have been discarded, and few, if any, can be any longer operational or in service at all, and have been deleted from this edition.

DEPOT SHIPS

9 "Atrek" Class

BAKHMUT AMBURAN AYAT Displacement: 3,500 tons standard (6,700 tons full load)

3,258 tons gross 336×49×20 feet Measurement; Dimensions:

Expansion and exhaust turbines. 1 shaft. H.P.: 2,450 = 13 kts. 2 water tube 3,500 miles at 13 kts. Machinery:

Radius:

General Advanced submarine parent ships. Built in 1956-58, and converted to naval use from "Kolomna" class freighters. There are a total of nine of these vessels employed as submarine tenders and replenishment ships. Atrek, fitted with radar homing beacons, is reported to be comprehensively equipped for serving nuclear powered submarines and ballistic missiles submarines.



ATREK. V(B) -272

1959, Sergei Romanov

3 "Dniepr" Class

PM 17

3,000 tons standard, 3,900 tons normal (4,270 tons Displacement:

full load) $325\times45\times14$ feet Dimensions:

General Machinery:

Diesels. Speed=12 kts.

A bow lift class of repair and depot ships for fleet support and maintenance. Built in 1957-64 as tenders and multi-purpose ships, and equipped with workshops and servicing facilities.



PM 17

Added 1965, courtesy Al. Navale

II "Neva" Class

2,500 tons 300×42×14 feet Speed=10 to 12 kts. Displacement: Dimensions:

Machinery: A specialised class of repair ships equipped with modern machine tools and instruments, Built in 1957-58,

PAYSHERD (ex-Otto Wünche)

Displacement:

Dimensions: Guns:

4.730 tons $\begin{array}{l} 4.730 \text{ tons} \\ 433 \times 52\frac{1}{3} \times 14\frac{1}{2} \text{ feet} \\ 4-4\cdot 1 \text{ inch, 2} \\ 4 \text{ MAN diesels, 2 shafts, B.H.P.: } 12,400 = 20 \text{ kts.} \end{array}$ Machinery:

General
Ex-German. Paysherd was built by Howaldt, Kiel. Launched in 1941.

KUBAN (ex-Waldemar Kophamel)

Displacement: Dimensions:

4,/26 tons $446\times52\frac{1}{3}\times14\frac{1}{3}$ feet 2—4·1 inch, 2—37 mm. AA. 4 MAN diesels. 2 shafts. B.H.P.: 12,400=20 kts. Guns: Machinery;

Ex-German. Launched in 1939. Submarine tender. Salvaged in 1950-51 after being sunk in shallow water by bombing during the Second World War. Underwent repairs and reconditioning in 1951-1957 for further service.

Ex-ADOLF LÜDERITZ

Displacement:

2,900 tons standard (3,615 tons full load) $374\times47\frac{1}{2}\times14$ feet 4-4·1 inch, 2-37 mm., 12-20 mm. 4 MAN diesels, 2 shafts, B.H.P.: 12,400=20 kts. Dimensions: Guns: Machinery:

Launched in 1939. Was employed by Germans as depot ship for motor torpedo bats, M.T.B. parent ship. In the Baltic. A photograph of ex-Adolph Lüderitz appears in the 1947-48 to 1965-66 editions.

Ex-TEREK (ex-Elbe)

Displacement: 820 tons standard (1,600 tons full load)

Dimensions:

Guns:

157½×28×11 feet 1—3·5 inch, 1—20 mm. AA. 2 sets Linke-Hofmann-Busch 6-cyl. 4-stroke diesels. 2 shafts. B.H.P.: 1,600=15 kts. Machinery:

Complement:

Launched in 1931. Ex-German fishery protection vessel. Formerly a depot ship, it latterly a supply ship for "Z" class submarines. A photograph of Terek appears supply ship for "Z" cla 17 to 1963-64 editions. 1946-47

Depot Ships-contd.

8 "Tovda" Class

V(B) 360 (ex-Zangezur) VYJEGRA V(B) 131 INZA (ex-Novoshaktinsk) KALAR V(B) 87 KS 2 KS 3 TOVDA SMOLENSK V(B) 415

Displacement: 3,000 tons standard (4,000 tons full load) Displacement Dimensions: Guns: 282×39×16 feet 6—45 mm, AA. (3 twin mountings) 2 diesels, B.H.P.: 7,000=16 kts.

Machinery: 7,000 miles at 16 kts. Radius:

General Polish built ex-tankers converted in 1958 to 1960. Depot and repair ships rated as fleet auxiliaries. Also known as the "Soldek" class, but the NATO designation is "Tovda" class. The old Smolensk (1931) is reported to have been scrapped or returned to the merchant navy.



SMOLENSK, V(B) 415

1959

CHUMIKAN

2 "Desna" Class

CHAZHMA

General Soviet Missile Range Instrumentation Ships (SMRIS). The "Desna" class have a larger hull than the "Sibir" class and are better equipped. Active since 1963.

4 "Sibir" Class

SIBIR SUCHAN CHUKOTKA SAKHALIN 4.000 tons standard (5,000 tons full load)
Chukotka 3,800 tons gross, Sakhalin and Sibir, 3,767
tons gross, Suchan 3,710 tons gross
493\\$\times56\times20 feet (ships vary)
6-45 mm. AA., 2 M.G.
Triple expansion. 2 shafts, I.H.P.: 3,300=12 kts.
3,300 miles at 12 kts. Displacement: Measurement: Dimensions:

Guns: Machinery:

General Radius: General Converted bulk ore carriers employed as Missile Range Ships in the Pacific. Sakhalin and Sibir, reported to be of almost equal size, have three bubble-like domes forward and aft, and carry helicopters. Suchan, somewhat smaller, is also equipped with a helicopter flight deck as in Sakhalin and Sibir. Launched in 1957-59. All active since 1959. Sibir is reported to be a new ship. The old Sibir from 1931 may have been scrapped or returned to the merchant navy.

IRTYSH (ex-Kronstadt)

Displacement: 5,880 tons

Dimensions:

328×46×19½ feet 4—3 inch, 3—45 mm. AA., 2 M.G. Triple expansion. 1 shaft, I.H.P.: 1,500=12 kts. Guns: Machinery: Coal: 430 tons

Radius: 1,500 miles at 12 kts.

General Complement:

240

Parent ship and general supply ship for submarines in the Baltic. Launched in 1931.

SARATOV

Submarine tender and depot ship of the "Anadyr" class. A refrigerated cargo ship and depot ship, Uso, was also reported.

ANGARA (ex-Hela)

2,115 tons standard (2,500 tons full load) $323\times42\frac{1}{2}\times11$ feet $2.4\cdot1$ inch, 1.37 mm, AA., 2.20 mm. AA. 4 MAN diesels. 2 shafts, B.H.P.: 6,300=18 kts. 2,000 miles at 15 kts. Dîsplacement: Dimensions: Guns: Machinery:

Radius: General

Former yacht built by Stülcken, Hamburg. Launched in 1939. In the Black Sea. A photograph of Angara appears in the 1947-48 to 1965-66 editions.

VOLGA (ex-Juan Sebastian De Elcano)

9,300 tons Displacement: Dimensions: Guns: Machinery:

459×56×22 feet 2-3 inch, 3-45 mm. AA., 5 M.G. Parsons turbines. 2 shafts. S.H.P.: 5,500=15 l.ts.

Oil fuel: 1.090 tons

General
Built by Echevarrieta and Larrinaga, Cadiz, in 1928. In the Black Sea, The Soviet
name as a merchant ship is not known, but she was probably immediately incorporated in the Soviet Navy. Combined transport and training ship.

The very old fishery

The very old fishery protection depot ship Vorovski (ex-Yaroslavna, ex-yacht Lysistrata) was deleted from the list in 1965.

Ex-DONETZ (ex-Weichsel, ex-Syra)

Displacement: Dimensions: Guns:

3,974 tons
309½ × 44 × 13½ feet
4—20 mm. AA.
Triple expansion. I.H.P.: 1,400=10·5 kts.
2 watertube
425 tons
135 Machinery:

Boilers: Coal: Complement:

General Depot ship for submarines. Built by Howaldt, Kiel. Launched in 1923. In the altic. A photograph of Donetz appears in the 1947-48 to 1963-64 editions. Disposals

The very old submarine repair tender and supply ship Smolnyl may have been scrapped, it is reported, and the equally old Emba (ex-limator) is now a merchant vessel. The older depot ships Neva (ex-Essequibo) and Primorye (ex-Hal Yen, ex-Bulga, ex-Signal) were deleted from the list in 1963 as they were no longer considered of military value. The even older Polyrnaya Zvezda may have been scrapped.

SUPPLY SHIPS

4 "Uda" Type

DONETS

Displacement: Dimensions: Guns:

circa 3,500 tons 293½×59×15½ feet 6—25 mm. AA. (3 twin, 1 forward, 2 aft) Diesels. Speed=18 kts.

A new type of Soviet supply ships. Particulars of this class are also reported follows: displacement 3,300 tons, dimensions $344\frac{1}{2}\times47\frac{1}{4}$ feet, armament two mm. AA guns (but three twin mountings can be seen in the photograph), and 25 mm. AA gur speed 13 knots.



SALVAGE VESSELS

3 "Prut" Class

MB 21 MB 22 MB 23 Displacement:

2,000 tons standard (3,500 tons full load) Displacement Dimensions: Guns: 2,000 tons standard (3,500 tons 344½ feet 4—57 mm. (quadruple) forward Speed=18 kts.

Machinery: General

Very large rescue vessels with raked down flush deck and mainmast derrick. Built in 1960.



MB 23

"Uda" Type

Added 1965, courtesy Ai. Navale

1966, col. Breyer

3 Submarine Rescue Type

VALDAY General

Three "T 58" class fleet minesweeper hulls were completed as submarine rescue ships at Leningrad in 1961.

4 "Pamir" Class

AGATAN ALDAN ARBAN PAMIR

Measurement:

1,443 tons to 2,032 tons gross 256 (o.a.)×42×13½ feet Two 10 cyl. 4 str. diesels. 2 shafts. B.H.P.: 4,200=17 kts. Dimensions:

Machinery: General

Salvage tugs built at A.B. Gavie, Varv, Sweden, in 1959-60. Equipped with strong derricks, powerful pumps, air compressors, diving gear, fire fighting apparatus and electric generators,

MB 24 Displacement:

835 tons 535 tons 134½ (w.l.), 143 (o.o.)×34×15 feet 1—3 inch d.p., 2—20 mm. AA. 2 B.M. diesels, 2 electric motors, 2 shafts, B.H.P.: 1.875=14 kts. Dimensions:

Guns: Machinery:

Oil fuel: 187

Complement:

General Salvage and rescue tugs. Built by Levingstone Shipbuilding Co., Orange, Texas, U.S.A. Launched in 1944. Ex-United States ATAs (Ocean Rescue Tugs). In the Baltic.



MB 24

Photo. A. Kull

SIGNAL

Displacement: Dimensions:

680 tons Speed; 14 kts.

Launched in 1936. Fitted with powerful pump and other apparatus for salvage the Baltic

Other numbers reported are A 2, 480, 481, 490, 495, 515, 525, 580, 610, 612, 621 and 663. Salvage vessels are designated MSB.

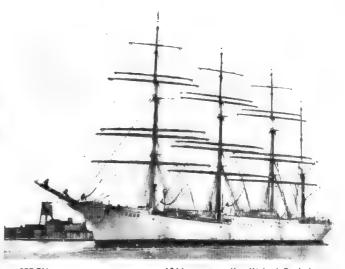
TRAINING SHIPS

2 "Sedov" Type

KRUZENSTERN SEDOV

Measurement: 3,064 tons gross

Barques. Built in 1921. Employed as sail training ships for midshipmen, cadets and junior seamen.



SEDOV

TEREK

1964, courtesy Mr. Michael D. J. Lennon

TOVARISCH (ex-Gorch Foch)

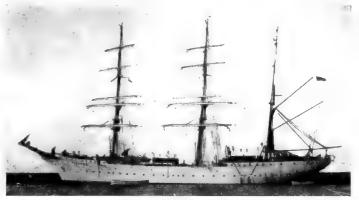
Displacement: Dimensions: Guns:

1.350 tons 242½×39½×15 feet 2—20 mm. AA. Molesel. 1 shaft, B.H.P.: 520=8 kts. Machinery: Oil fuel:

,500 miles at 8 kts.

Complement: 260

General Barque. Ex-German training ship. Built by Blohm & Voss, Hamburg. Launched in 1933. Sail area: 2,150 sq. yds.



TOVARISCH

1958, R. M. Scott

PRAKTIKA (ex-Passat) TOBOL UCHEBA (ex-Mousson)

General Displacement: 300 tons

Three masts. In the Baltic, Sailing vessels for training cadets, boys and volunteers. There are about ten three-masted schooners of 300 tons with one square sail on the foremast of the same class as the *Pratika* and *Ucheba*, built in Finland. They are described as very nice little ships.

NYEMAN (ex-Isar, ex-Puma)

Displacement: Dimensions: Guns: Machinery:

3,850 tons $319\times45\frac{1}{2}\times13$ feet 4-37 mm. Triple expansion. 2 shafts. I.H.P.: 2,000=12 lets.

Built by Bremen-Vulcan, Launched in 1930, Converted merchant vessel, Former Submarine Depot Ship. Now a training ship in the Baltic, Nyeman is the name of a river in Western Russja.

Ex-CRISTOFORO COLOMBO, Ex-Z18 Displacement:

Dimensions: Sail area: Machinery:

2,787 tons 218 (pp.), 257 (o. σ ,)×48½×20½ feet 18,700 sq. ft. 2 Tosi diesels with electric drive to 2 Marelli motors. 2 shafts. H.P.: 1,600=10 kts. 103 tons

Oil fuel:

Radius: Complement: 6,000 miles at 8 kts. 280

General Built at Castellammare. Launched on 4 Apr. 1928, Assigned to the Soviet Navy by the Italian Peace Treaty. Delivered to the U.S.S.R, in Feb. 1949.

Disposals

Disposals

The old training ships Komsomolets (ex-Okean) and Krasnoye Znamya (ex-Khrabryi) may be scrapped, it is reported. The old training ship Aurora was deleted from the list in 1963 as although she still exists as a prestige tourist relic (famous to the U.S.S.R. as the ship from which the first round of the October revolution was fired) she is no longer considered of any military value.

SURVEY SHIPS

MICHAIL LOMONOSOV

Displacement:

5,960 tons

Measurement:

3,897 tons gross, 1,195 tons net Speed=13 kts. Machinery:

General

Built by Neptun, Rostocli in 1957. Operated by the Academy of Science. Equipped ith 16 laboratories. Carries a helicopter for survey.



MICHAIL LOMONOSOV

1965, courtesy Mr. Michael D. J. Lennon

NEREIDA

General

Oceanographic research ship. Reported to be on operational service in Apr. 1965.

VITYAZ

Displacement:

5,700 tons

General Complement: Machinery:

5,700 tons
Speed=14.5 kts.
137 officers and men including 73 scientists

Oceanographic research ship. Equipped with 13 laboratories, 18,400 miles range at 14 kts.

NEVELSKOYE

Displacement: General

275×50×13 feet

A new naval hydrographic survey ship designed and built in the U.S.S.R.

GAVRIL SARITSHEV

NIKOLAI ZUBOV POLYUS

Displacement:

Dimensions:

Machinery: Complement: General

2.674 tons standard (3,021 tons full load) $295\frac{1}{2}$ $42\frac{1}{2}$ 15 feet 2 diesels. Speed=16·7 kts. 108 to 120, including 70 scientists

General

Nikolai Zubov, oceanographic research ship, was built at Szczecin Shipyard,
Poland in 1964. Visited London in 1965. Employed on survey in the Atjantic.

Gavril Saritshev is a sister ship.

A photograph of Nikolai Zubov appears in the 1965-66 edition (page 459,

Addenda)



GAVRIL SARITSHEY

1966, courtesy Mr. Michael D.J. Lennon

AISBERG

OKEANOGRAF

General
Trawlers converted for surveying. Visited Glasgow in 1964. GIDROFON GIDROMTR

GIDROSKOP

GORIZONT

Displacement: Dimensions: Machinery:

650 tons standard (945 tons full load) 180 (w.l.), 184½ (o.a.)×33×10 feet Diesels, 2 shafts. B.H.P.: 1,440=15 kts.

Complement:

Former United States steel-hulled fleet minesweepers of the "Admirable" class converted into surveying ships. Pennant numbers G-140, G-145, G-142 and G-139, respectively. The name Gldrofon is reported to have been given to an intelligence trawler, so the vessel named above may have been replaced or renamed.

Displacement:

Dimensions:

550 tons standard (750 tons full load)
202×28×9 feet
Triple expansion. Exhaust turbine. 1.H.P.: 2,150=16 kts. Machinery:

Boilers:

eneral G 402, G 482 and other ex-German minesweepers are used as survey ships. A photograph of G 482 appears in the 1959-60 to 1965-66 editions.

CHUKCHA

Displacement:

2,700 tons standard (3,900 tons full load) $246\times43\frac{1}{2}\times14$ feet Triple expansion. I.H.P.: 900=10 kts.

Dimensions: Machinery:

Fuel: 900 tons coal

In the White Sea (as is Lebedj below). Ost, Vest and Zuid were deleted from the list in 1965. Sister ship Nord was lost.

LEBED

Displacement: Dimensions:

Guns:

1,100 tons $180\frac{1}{2}\times29\frac{1}{2}\times16$ feet 1—37 mm. AA., 2—13 mm. M.G. Triple expansion. I.H.P.: 680=12 kts, Machinery:

Survey Ships-contd.

AYTODOR

Measurement: General

1.217 tons gross, 448 tons net

Built at Budapest, Naval survey (ex-merchant) ship of the "Pesht class.



AYTODOR

1965, courtesy Mr. Michael D. J. Lennon

POLYARNYI

KAMCHADEL PARTIZAN

Displacement: Dimensions:

1,300 tons 210×32½×11 feet 2—4 inch, 2 M.G. Triple expansion. I.H.P.: 700=9·5 kts. 400 tons coal Guns: Machinery: Fuel

General Complement:

Partizan and Polyarnyl were both launched in 1937, In the Far East, Pennant Nos. G-121, G-124 and G-075, respectively. OKEAN **OKHOTSK TEODOLIT**

Displacement: Dimensions:

Guns:

1,500 tons standard (3,200 tons full load) 265½×42½×18½ feet 3—5·I inch, 2—3 inch, 2 M.G. Triple expansion. 2 shafts, I.H.P.: 2,400=14 l.ts, Machinery: Complement:

160

General Launched in 1937-38. In the Far-East. Former minelayers converted into survey ships Nos. G 098 and G 104, respectively. Murmon of this class is reported extant. A photograph of Okhotsk appears in the 1955-56 to 1965-66 editions.

GIDROGRAF (ex-Hydrografs)

600 tons Speed: 10 ks. Displacement: Machinery:

General

STYOR

Ex-Latvian surveying vessel and tender, Launched in 1918,

OLEG KOSHEVOI PRIBOI VARIOMETR ALIDADA EKHOLOT GIDROSTAT LT. SHMIDT

General

Pennant Nos. G-165, G-199, G-15, G-151, G-169, G-084 and G-160, respectively. GIDROLOG SORAKORAM VAL

Former Japanese "Kaibokan" class converted into surveying ships. Pennant numbers G-111, G-127 and G-108, respectively.

KOMPAS

Displacement: Machinery:

415 tons Speed: 7 kts.

Ex-Estonian. Surveying vessel and general utility ship. Launched in 1918.

EKVATOR (ex-Meteor)

Displacement: 1.200 tons Dimensions: Gune

1,200 tons 2198×331×12½ feet 1—3·5 inch, 1 M.G. 2 sets 8-cyl 4 stroke Diesels, 2 shafts. B.H.P.: 2,200= Machinery:

14:5 kts.

General Built by Kaiserliche Werft, Danzig. Launched on 18 Jan. 1915. Name means "Equator". Refitted in East Germany in 1957.

AZIMUT

Displacement: 420 tons Dimensions: 144½×28½×11 feet Speed=11 kts. Machinery:

Swedish built Launched in 1914 Fitted with a reinforced stern for icebreaking.

GALS

540 tons Displacement:

Dimensions: Machinery:

Triple expansion. I.H.P.: 240=8 kts. 45 tons coal

Fuel: BAROGRAF Displacement:

260 tons 92×19×12½ feet Dimensions: Machinery:

Triple expansion, I.H.P.: 425=7.5 kts. Complement:

GLOBUS

ZENIT

General

Both reported to be of the "Samara" class survey ships. Zenit means "Zenith." ALEXSEY CHIRIKOV FEDOR LITKE

REPAIR SHIPS

KOMMUNA (ex-Volkhov) Displacement:

Machinery:

Diesels. 2 shafts, Speed=8 kts.

General

Old submarine salvage vessel. Launched in 1913. Double hull. After having been out of commission for many years she was refitted and modernised at De Schelde Yard, Flushing, Netherlands, in May 1950-July 1951. A photograph of Kommuna appears in the 1955-56 to 1964-65 editions.

ELBRUS

Displacement: Dimensions: Guns: Machinery: Oil fuel: Complement: 2,600 tons 302×39×13↓ feet 2—3 inch, 1—45 mm. AA. Diesel-electric. H. P.: 2,800 = 13 kts. 180 tons 150

BOOM DEFENCE VESSELS

18 "Neptun" Type

Displacement:

700 tons $170\times36\times12\frac{1}{2}$ feet Oil fuel. Speed=12 kts. Dimensions: Machinery:

General

defence vessels or netlayers built in 1957-60 by Neptun, Rostocks,

Disposais

sposals The boom defence vessel Lena (ex-German Franz E. Sehütte) was returned to the erchant Navy. The boom defence vessels Ladoga, Onega and Vyatka were deleted Merchant Navy. The b from the list in 1963.



1959, Antonov Rogov

TRANSPORTS

Ex-HAYASAKI

Displacement:

950 tons Measurement:

Dimensions:

2.166 tons gross 190½ (pp.), 194½ (w.l.), 204½ (σ.σ.)×31×10¼ feet 1—3·1 inch, 2—25 mm., 2—13 mm. AA. 2 diesels. B.H.P.: 1,600=15 kts.

Guns: Machinery:

General

Built at Sakurajama. Launched in 1943. Formerly the first Japanese refrigeration ship. A photograph appears in the 1953-54 to 1964-65 editions.

Ex-No. 13

Displacement: Dimensions:

1.800 tons

Guns:

1,000 tons 315 $(o.a.) \times 33\frac{1}{7} \times 12$ feet 2—3 inch, 26—25 mm. AA., 5 M.G., 42 D.C. Turbine, S.H.P.; 9,500=22 kts. Machinery:

Former Japanese, Cargo capacity 500 tons for landing 480 marines.

Ex-No. 137

Displacement: Dimensions:

1,129 tons 264 (o.a.) \times 30 \times 10 $\frac{1}{2}$ feet 1—3·9 inch, 21—25 mm. AA., 12 D.C. Turbine. S.H.P.: 2,500=16 kts.

General

Former Japanese. Cargo capacity, 218 tons, plus 674 tons of fuel. Accommodation for 120 marines.

Ex-MONTECUCCO (ex-KT 32)

Measurement:

834.4 tons gross 2213×393×9 feet

Dimensions:

Triple expansion. 2 shafts. I.H.P.: 2,200=12 kts. Machinery: Coal:

P-35

P-252

MONGOL

Former Italian. Built by Ansaldo. Launched on 19 Dec. 1942. Ceded under the Peace Treaty. Delivered to Russia on 23 May, 1949.

P-6 P-7 P-11 P-13 P.15

General

Transports of the above pennant numbers are reported, but no names.

KAMCHATKA

General "Lake" class, Pennant numbers P-380 and P-242, respectively.

SHILKA OLEKMA OLGA SHIM OB USSURIJ (ex-Okhotsk) VISHERA

Pennant Nos. P-247 (Ob), P-250 (Olekma), P-274 (Shilka), P-365 (Ussurij), P-379 (Vishera), Olekma (also rendered as Olenka) is ex-Japanese "Kisak" class. Olga and Ishim are Coast Guard transports.

Ex-BASENTO Ex-ISTRIA

General Small water tankers ceded under Italian Peace Treaty. Volodel was discarded. Voda'' class water tanker Vodoleyz also reported.



TM 322

1962, courtesy Godfrey H. Walker, Esq.

FLEET OILERS

CRYPTON

1.769 tons gross, 559 tons net Measurement: General



CRYPTON

Guns:

1965, courtesy Mr. Michael D. I. Lennon

"Pevek" Class

POLYARNIK

Dimensions:

Length: 400 feet 8-45/57 mm, (2 quadruple)

General A new type of oiler similar to the U.S. petrol carriers (AOG). Polyarnik has pennant No. P-260.

29 "Khobi" Class

KHOBI **NARA** ORION

SEYMA

VOLKHOV

ZOLOTOY ROG

General

Of this class 29 units are reported to have been built from 1957 to 1959.

KRASNOFLOTETS ALATYR IRBIT JAHROMA KRASNOARMEETS General

Pennant Nos.: P-393 (Alatyr), P-256 (Irbit), P-260 (Polyarnik), P-384 (Rossash) and P-335 (Krasnoflotets). The latter is a Coast Guard tanker. P-268 P-352 P-264 P-380 P-384

General

Fleet oilers of the above numbers are reported, but no names. KONDA

General

Volkhov of Leningrad or Kozbek class taken over by the Navy as an oiler.



V(B)-19

1959 Sergei Romanov

FLEET TUGS

KAPITAN V. FEDETOV

General

A large and powerful tug with a comprehensive array of radar and radio aerials. ZOLOTOI DUNAL NAEZDNIK TEREK

General Pennant Nos, A 486, A 624, A 515, A 495 and A 612, respectively.

MB V-48 MB V-72 General

Photograph In the 1959-60 edition. MB 160 is of the "Okhtenskiy" class.

CHF 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

General

Letters painted on howe are initial letters of "Chernomorskii Flet" manning

General
Letters painted on bows are initial letters of "Chernomorskii Flot", meaning
"Black Sea Fleet". A photograph of CHF 19 appears in the 1959-60 edition.

MOROZ (ex-Soldat). Photograph in the 1959-60 edition. STROGIY ("Orel" class),



KAPITAN V. FEDETOV

ICEBREAKERS

2 Projected. Nuclear Powered

General To be built from the same plans as Lenin but will have only two reactors and will be lighter than 16,000 tons.

I New Construction. Nuclear Powered

ARKTIKA

Displacement:

25,000 tons
525 × 82 × 29 feet
Nuclear reactors and steam turbines = 25 kts.

General

The largest icebreaker ever designed. Under construction. Reported to be designed to operate up to ten helicopters.

I Large Nuclear Powered Type

Displacement: Dimensions: Aircraft: Machinery:

16.000 tons $440\times90_{3}\times25 \text{ feet}$ 2 helicopters 3 pressurised water-cooled nuclear reactors, 4 steam turbines, 3 shafts (no shaft in bow), S.H.P.: 44,000-18 kts. (max.) (see Engineering)

General

General

The world's first nuclear powered surface ship to put to sea. Built at the Kirov Elektrosia Works, Leningrad. Launched on 5 Dec. 1957. Completed and commissioned on 15 Sep. 1959 when she sailed on her maiden voyage into the Baltic. Reported to have accommodation for 1,000 personnel. It is reported that she is actually a parent ship and support tender for the nuclear powered submarine flotilla. Engineering

The nuclear reactors enable her to steam for 18 mounths without refulling. Fuel consumption is reported to be only five ounces daily. The turbines were manufactured by the Kirov plant in Leningrad. Three propellers aft, but no forward screw. Operational

perational
With her reinforced prow she is able to force a 100 ft. wide ice-free swathe and
ove continually through solid pack ice 8 feet thick at 3 to 4 knots.



LENIN

Added 1966

3 + 2 Large Diesel Powered Type

KIEV

Displacement: Displacement:
Dimensions:
Aircraft:
Machinery;
Oil fuel:
Radius:
Complement:

LENINGRAD MOSKVA 12.840 tons standard, 15,360 tons full load 368½ (w.l.), 400½ (o.a.) ×80½ ×31 (normal), 34½ (max.) feet 2 helicopters 8 Sulzer diesel-electric, 3 shafts. S.H.P.: 22,000=18 kts. 3,000 tons 20,000 miles

145

General

General Largest diesel-electric icebreakers in the world. Designed to stay at sea for a year without returning to base. Built by Wartsilä-Koncernen A/B Sandvikens Skeppsdocka, Helsinki, The concave embrasure in the ship's stern is a housing for the bow of a following vessel when additional power is required. There is a landing deck for helicopters and hangar space for two machines. Moskwa was launched on 10 Jan. 1959 and completed in June 1960. Leningrad was laid down in Jan. 1959. launched on 24 Oct. 1959, and completed in 1962. Kiev was completed in 1966. Two more sister ships are under construction. Engineering

Engineering
Eight generating units of 3,250 B.H.P. each comprising eight main diesels of the Wärtsilä-Sulzer 9 MH 51 type which together have an output of 26,000 electric H.P. Four separate machinery compartments. Two engine rooms, four propulsion unit in each. Three propellers aft. No forward propeller. Centre propeller driven by electric motors of 11,000 H.P. and each of the side propellers by motors of 5,500 H.P. Two Wärtsilä-Babcock & Wilcox boilers for heating and donkey work.

Operational Moskva has four pumps which can move 480 metric tons of water from one side to the other in two minutes to rock the icebreaker and wrench her free of thick ice.



MOSKVA

1960, Wärtsilä-Koncernen A/B Sandvikens Skeppsdocka

POLLUKS (ex-Pollux)

Displacement: Dimensions: Machinery:

4,500 tons $262\frac{1}{2}\times63\times23$ feet Triple expansion. I.H.P.: 6,000=13 kts.

General Boilers: Built in the Netherlands by Smit, Rotterdam, in 1943. Pollux was German name.

Icebreakers-contd.

3 "Kapitan" Class KAPITAN MELECHOV

KAPITAN BELOUSOV

Displacement:

4,375 to 4,415 tons 265 (w.l.), 263 $(o.o.)\times63\frac{3}{4}\times23$ feet Diesel-electric. 6 Polar 8 cyl. B.H.P.: 10,500=16.5 kts.

Displacement Dimensions: Machinery: Oil fuel: 740 tons

General
Kapitan Belousov was laid down at the end of 1952 and completed in Sep. 1954.
All built by Wärtsilä-Koncernen A/B, Sandvikens Skeppsdocka, Helsinki. The ships have four screws, two forward under the forefoot and two aft.

Name	Measurement	Launched	Complete
Kapitan Belousov Kapitan Melechov Kapitan Voronin	5,360 tons gross 4,000 tons gross 3,416 tons gross	19 Oct. 1954 1955	1955 1957 1956



KAPITAN BELOUSOV

1966

KAPITAN VORONIN

ALIOSHA POPOVICH (ex-German Eisvogel)

Displacement: Dimensions: Machinery:

2.090 tons 200 × 49½ × 21¾ feet 2 Triple expansion. I.H.P.: 3,200=13.5 kts.

Boilers: General

Former German icebreaker. Built by Aalborgs. Launched in 1941. In the White Sea.

ILIYA MUROMETS (ex-German Eisbar)

Displacement: Dimensions: Machinery: Boilers:

1,918 tons 180½ × 49½ × 21¾ feet Triple expansion. 1.H.P.: 1,600=15 kts.

General
Former German icebreaker, Built by Eriksberg, Gothenburg, Launched in 1941.

PERESVET (ex-Castor)

Displacement: Dimensions:

5,150 tons 295½ × 69 × 22 feet Triple expansion. 3 shafts. I.H.P.: 9,600 = 15 kts. 4 Wagner Machinery: Boilers:

General

Former German icebreaker, Built by Schichau, Danzig, Launched in 1939.



PERESVET

1959

LAZAR KAGANOVICH MIKOYAN (ex-Otto Schmidt)

4 "Stalin" Class

ADMIRAL LAZAREV (ex-Yosif Stalin) ADMIRAL MAKAROV (ex-Vyacheslav Molotov)

Displacement: 11,000 tons

Measurement: Dimensions: Aircraft: Machinery:

11,000 tons 4.866 tons gross 335 $\frac{1}{2}$ (p.p.), 351 (o.a.)×75 $\frac{1}{2}$ ×22 feet 1 helicopter (see General) Triple expansion, with diesel-electric propulsion for cruising, 3 shafts. H.P.: 10,050=15·5 kts.

Boilers:

4,000 tons coal, and diesel oil Fuel: Complement:

3 aircraft and 1 catapult were included in the design of these large and very powerful icebreakers. All are in the White Sea.

Name Builders Completed Lazar Kaganovich Mikoyan Admiral Makarov Admiral Lazarev Baltic Works, Leningrad Nikolayev Baltic Works, Leningrad Baltic Works, Leningrad 30 Apr. 1937 1938 8 Mar. 1939 1938 1939 8 Mar. 14 Aug.



MIKOYAN after refit

1965, col. Brever

Icebreakers-contd

SEVMORPUT

6,000 tons 3 shafts. Speed: 11-5 kts. Displacement: Machinery:

Icebreaker of medium size and low power. Built at Leningrad. Launched in May 1937.

SIBIRYAKOV (ex-Jääkarhu)

Displacement: Dimensions: Machinery:

4,825 tons $246\times63\times21$ feet Triple expansion. 3 shafts. I.H.P.: 9,200=15 kts. 8. Oil fuel

Boilers:

General Built by Smit, Rotterdam, and launched in 1926. Formerly Finnish. (Jääkarhu means icebear). Appropriated by the U.S.S.R.



SIBIRYAKOV

P. Bronsveld

Ex-KRISJANS VALDEMARAS
Displacement: 2,800 tons
Measurement: 1,932 tons gross
Dimensions: 1964 x 55 \(\frac{1}{2} \times 22 \) feet
Machinery: Triple expansion. I.H. P.: 5,200 = 15 kts.
350 tons coal

General

Built by Beardmore and launched in 1925. Renamed now. Formerly a Latvian ship.

Photograph in the 1957-58 and earlier editions.

KRASSIN (ex-Sviatogor)

Displacement: Measurement: Dimensions:

9,300 tons 4,902 tons gross 297 (w.l.), 323‡ (o.a.)×71×26 feet 3 sets triple expansion. 3 shafts. I.H.P.:10,000=15 kts. Machinery:

10 single-ended 3,200 tons coal 190 Boilers: Fuel:

Complement:

General Large and powerful icebreaker. Built by Armstrong and launched in 1917. In the Baltic. Photograph in 1951-52 and earlier editions.

VLADIMIR ILYICH (ex-Lenin, ex-Aleksandr Nevskii)

Displacement:

6.260 tons 3.828 tons gross 273 (w.l.), 281 (o.a.) \times 64 \times 19 (mean), 20 $\frac{1}{4}$ (max.) feet 3 sets triple expansion. 3 shafts. I.H.P.: 8,000=12 kts. Displacement:
Measurement:
Dimensions:
Machinery:
Boilers:
Fuel:

,200 tons coal

Complement:

General
Built by Armstrong, Launched in 1917, Refitted on the Mersey in 1946-47. In the Baltic.



VLADIMIR ILYICH

1954. Keith P. Lewis

MALYGIN (ex-Voima)
Displacement:
Dimensions:
Machinery:

2,070 tons $210\frac{1}{2}\times46\frac{1}{4}\times16\frac{3}{4}$ feet Triple expansion. I shaft. I.H.P.: 4,100=13·5 kts.

General
Former Finnish icebreaker. Built by Sandvikens and launched in 1917. In the Baltic.
Photograph in the 1957-58 and earlier editions.

STEPAN MAKAROV (ex-Knyaz Pozharski)
Displacement:
Measurement:
Dimensions:
Dimensions:
Machinery:
Triple expansion. 3 shafts. 1,H.P.: 6,400=14.5 kts.

Boilers: Fuel: 700 tons coal

General General
Built by Swan, Hunter and Wigham Richardson, Ltd., Wallsend-on-Tyne, and
launched in 1916. In the Black Sea. Photograph in the 1951-52 and earlier editions.

Icebreakers-contd.

LEDOKOL 7

Measurement:

2,305 tons gross

General

Built at Leningrad in 1964. In the Black Sea at Odessa.



LEDOKOL 7

1965, courtesy Mr. Michael D. J. Lennon

DOBRINYA NIKITICH

Displacement: Measurement: Dimensions; Machinery: Boilers:

2,460 tons standard 1,664 tons gross 200 (pp.), 211 (o.a.)×50½×20 feet Triple expansion. 2 shafts, 1.H.P.: 4,000=14 kts.

370 tons coal

Fuel: General

Built by Swan, Hunter and Wigham Richardson, Ltd., Wallsend-on-Tyne, and launched in 1916. In the Black Sea, Photograph in the 1951-52 and earlier editions.

VOLYNETS (ex-Suur Töll, ex-Vainamoinen, ex-Volynets, ex-Tsar Mikhail Fyodorovich)

Displacement: Dimensions:

4,000 tons 236½ x57 x 18½ feet 3 sets triple expansion. 3 shafts. I.H.P.: 5,800 = 13·5 kts, 800 tons coal Machinery: Fuel:

Former Estonian icebreaker. Launched in 1914. In the Baltic, Photograph in the 1957-58 and earlier editions.

SADKO (ex-Lintrose)

General

Displacement: Measurement:
Dimensions:
Machinery:
Boilers:

2,000 tons 1,613 tons gross $255 \times 37\frac{1}{2} \times 21$ feet Triple expansion I.H.P.: 3,500=14 kts.

Boilers: 7
General
Built by Swan, Hunter and Wigham Richardson, Ltd., Wallsend-on-Tyne. Launched
in 1913. Transferred from the Canadian Government in 1915. Sunk during the First
World War off the Arctic coast of the U.S.S.R. where she lay for many years until
raised and refitred in the White Sea. Photograph in the 1957-58 and earlier editions

FYODOR LITKE (ex-Kanada, ex-Earl Grey)

Displacement: Measurement: Dimensions: Machinery:

3,400 tons 2,216 tons gross 250 (pp.), 265 (o.a.) \times 48 \times 17½ (mean), 22½ (max.) feet Triple expansion. 2 shafts. I.H.P.: 6,000 = 17· kts.

General
Built by Vickers and launched in 1909. Transferred from the Canadian Government in 1915. Refitted on the Mersey in 1947-48. In the White Sea. Photograph in the 1951-52 and earlier editions.

TAIMYR

Displacement:

1,290 tons standard Speed: 10·5 kts.

Machinery:

Small and low powered icebreaker. Launched in 1909. In the White Sea. Photograph in the 1951-52 and earlier editions.

GEORGII SEDOV (ex-Beothic)

VLADIMIR RUSANOV (ex-Bonaventure)

Displacement: Measurement: Dimensions: Machinery: Fuel: 3,217 tons 1,383-1,588 tons gross 240½×36×16½ feet Triple expansion. 1.H.P.: 3,000=13·5 kts. 500 tons coal

Built in 1909, by D. & W. Henderson & Co. and by Napier & Miller, respectively. Both purchased in 1915. In the White Sea. In 1939 Georgii Sedov achieved a record latitude in her ice-bound drift northward.

MONTCALM

Measurement: Measurement: 3,270 tons

3,270 tons 1,432 tons gross 245 × 40½ × 15¾ feet 2 sets triple expansion. 2 shafts. I.H.P.: 3,225 = 14 kts, 4 Babcock & Wilcox 425 tons coal Dimensions: Machinery: Boilers:

Fuel:

Built by Napier & Miller and launched in 1904. Transferred from the Canadian Government in 1942. In the Far East, It is doubtful if this ship is still operational.

YERMAK

General

Displacement: Measurement: Dimensions: Machinery:

8.800 tons
4,955 tons gross
305 (pp.), 320 (o.σ.) ×71½ × 25 (mean), 28 (max.) feet
3 sets triple expansion. 3 shafts aft and I forward. I.H. P.
9,500=14 kts.
10 S.E.
2,100 tons coal

Boilers: Fuel: Complement:

General

Built by Armstrong and launched in 1898. Name is that of the conqueror of Siberia, Refitted in Antwerp in 1949-50. In the Baltic, This ship is now very old and may be scrapped in the near future. Photograph in the 1947-48 to 1964-65 editions.

Construction

The majority of the above icebreakers are immensely strong in framing and scant-lings, with exceptionally thick plating, and decks strengthened to permit guns being mounted in wartime.

Disposals

Disposors

The very old and small icebreaker Davidov (ex-Krasnyl Oktyabr, ex-Nadyazhnyi) was discarded and replaced by a new icebreaker.

URUGUAY

FRIGATES

ARTIGAS (ex-U.S.S. Bronstein, DE 189) URUGUAY (ex-U.S.S. Baron, DE 166)

2 Ex-U.S. Destroyer Escort Type (Escort Vessels, DE)

"Bostwick" Class

Displacement:

1,240 tons standard (1,900 tons

Dimensions: Guns: A/S weapons: Machinery:

1,240 tons standard (1,700 tons full load)
306 (o.a.)×37×17 feet
3—3 inch, 2—40 mm. AA.
Hedgehog. 8 D.C.T., 1 D.C.R.
Diesel-electric, 2 shafts. B.H.P.:
6,000=19 kts.
315 tons (95 per cent)
8,300 miles at 14 kts.

Oil fuel: Radius:

Complement:

General

General
Former United States destroyer escorts of the "Bost-wick" class, transferred to Uruguay in 1951. The three 21 inch torpedo tubes (triple) and the ten 20 mm. AA. guns were removed. Uruguay has no mainmast.

Photographs.

A photograph of Uruguay appears in the 1957-58 to 1965-66 editions

Pennant No. DE 2 DE 1

Builders Federal S.B. & D.D. Co., Pt. Newark Federal S.B. & D.D. Co., Pt. Newark

Launched 14 Nov. 1943 9 May 1943 Completed 13 Dec. 1943 5 July 1943



ARTIGAS

Uruguayan Navy, Official

MONTEVIDEO (ex-H.M.C.S. Arnprior, ex-H.M.S. Rising Castle)

Pennant No.: PF 1

Bullders: Harland & Wolff, Ltd., Belfast Laid down

Launched:

Completed: 21 June 1943 8 Feb. 1944

Ex-British Corvette Type Training Ship (Buque Escuela)

"Castle" Class

Displacement:

1,010 tons standard (1,600 tons

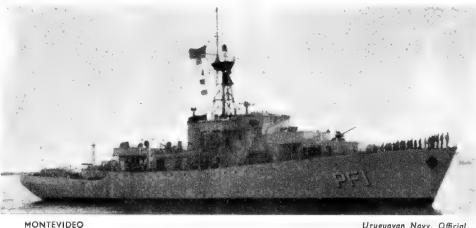
Dimensions:

A/S weapons:

1,010 tons standard (1,600 tons full load)
251½×36½×17½ (max.) feet
1—3 inch, 2—40 mm, AA., 4
—20 mm. AA.
Hedgehog. 2 D.C.T., 1 D.C.R.
Triple expansion. 190 r.p.m.
1.H.P.: 2,750=17 kts,
2 water tube, oil fired
480 tons (max.)
5,400 miles at 9.5 kts.
90 Machinery:

Boilers: Oil fuel: Radius Complement:

Former British and Canadian "Castle" class corvette (frigate). Employed as a training ship.



Uruguayan Navy, Official

SURVEYING VESSEL

CAPITAN MIRANDA

Displacement: Dimensions: Machinery:

516 tons standard (549 tons full load) 148 (pp.), 179 (o.a.) \times 26 \times 10 $\frac{1}{2}$ feet 1 M.A.N, diesel, B.H.P.; 500=11 kts, 27 tons.

Oil fuel;

Built by Sociedad Española de Construccion Nava, Matagorda, Cadiz. Launched in 1930. A photograph appears in the 1932 to 1957-58 editions. Pennant No.: AGS 10.

PATROL VESSELS

COMMANDANTE PEDRO CAMPBELL, MSF 1 (ex-U.S.S. Chickadee, MSF 59)

Displacement: Dimensions: Guns: Machinery:

890 tons standard (1,250 tons full load) 215 (w.l.), 2214 (o.a.) × 324 × 104 feet 1-3 inch, 50 cal. d.p.; 2-40 mm AA. Diesel electric, 2 shafts. B.H.P.: 3,118=18 kts.

General

Former United States fleet minesweeper of the "Auk" class, Built by Defoe B. & M. Works, Launched on 20 July 1942. Transferred on loan at San Diego, 1966.

MALDONADO (ex-U.S.S. PC 1234)

Displacement: Dimensions:

Guns; A/S weapons; Machinery;

280 tons standard (450 tons fLII load) 165 (pp.), 170 (w.i.), 173 $\frac{1}{2}$ (o.o.) \times 23 \times 10 $\frac{1}{4}$ feet 1—3 inch d.p., 1—40 mm., 3—20 mm. 1 M.T., 4 D.C.T. 2 G.M. diesels. 2 shafts, B.H.P.: 3,750=19 kts.

Former United States submarine chaser. Built in New York. Launched on 3 Apr. 1943. Transferred from the U.S. Navy in 1944. Pennant No. PC 1 (ex-B 1).



Uruguayan Navy, Official

Patrol Vessels-contd.

2 "Paysandu" Class

RIO NEGRO (22 Aug. 1935)

SALTO (11 Aug. 1935)

Displacement: Dimensions:

150 tons standard (180 tons full load)
137×18×10 feet
1—40 mm AA.
2 Germania diesels. B.H.P.: 1,000=17 kts. Guns: Machinery: Oil fuel:

18 tons

4,800 miles at 10.7 kts.

Radius; General

nerui Training ships. Pennant Nos. PR 3, PR 2, respectively. Built by Cantieri Navali uniti, Ancona, Italy. Launch dates above. *Paysandu* was stricken in 1963.



OILER

RIO NEGRO

Added 1966, Dr. Giorgio Arra

PRESIDENTE ORIBE

Measurement: Dimensions: Machinery: Boilers:

17,920 tons gross, 28,267 tons deadweight $587\frac{1}{4}$ (pp.), 620 (o.a.)×84 $\frac{1}{4}$ ×33 feet 1 Ishikawajima turbine, S.H.P.: 12,500=16·75 kts. 2 Ishakawajima-Harima Foster Wheeler type 76

General Complement: Built by Ishakawajima-Harima Ltd. Delivered to the Uruguayan Navy on 22 Mar. 1962, Radius: 16,1000 miles at 16 kts. Pennant No. A 09.



PRESIDENTE ORIBE

1963, Uruguayan Navy, Official

VENEZUELA

Administration

Commander General of the Navy: (Chief of Naval Operations)

Rear-Admiral Juan P. Torrealba M.

Chief of Naval Staff:

Rear-Admiral Jesus Carbonel J.

Naval and Military Attaché in London: Major General M. A. Morin

Naval Attaché in Washington: Rear-Admiral Guillermo Ginnari T.

New Construction Programme

Programme includes 1 cruiser, 2 to 4 submarines and several minesweepers.

Personnel

1966: 3,200 naval officers and men 2,500 Marine Corps

Mercantile Marine

Lloyd's Register of Shipping: 79 vessels of 313,418 tons gross

SUBMARINES

Pennant No.: S 11

Builders:

Launched:

Commissioned:

28 Dec 1943

I + I Ex-U.S. "Balao" Class

Displacement: Dimensions:

CARITE (ex-U.S.S. Tilefish, SS 307)

1,526 tons standard, 1,816 tons surface (2,425 tons submerged) 312 (o.a.)×27×17 feet 10—21 inch (6 bow, 4 stern) Diesels. 2 shafts. B.H.P.: 6,400= 20 kts. (surface) Electric motors. H.P.: 4,600= 10 kts. (submerged)

Machinery:

Oil fuel:

300 tons 12,000 miles at 10 kts. 80 Radius: Complement:

Former United States submarine of the "Balao" class. Purchased by Venezuela in 1960 after a three to four months overhaul in the United States. Transferred from the U.S. Navy at San Francisco on 4 May 1960. Overhauled in San Francisco Navy Yard in 1962.

hauled in San Francisco (Navy Tara in 1752).

Transfer
The transfer of a second submarine by the U.S.A. to Venezuela was approved by the U.S. House Armed Service Committee in Aug. 1965.

Photographs
A starboard bow surface view of Carlte appears in the 1962-63 to 1964-65 editions.



CARITE

1965, Venezuelan Navy, Official

DESTROYERS

3 British Vickers-Built "Nueva Esparta" Class

Displacement:

2,600 tons standard (3,300 tons

Dimensions:

full load) $384 (w.l.), 402 (o.a.) \times 43 \times 12\frac{3}{4}$

Guns:

Tubes: A/S weapons:

Machinery:

384 (w.l.), 402 (a.a.)×43×12‡ feet 6—4·5 inch (3 twin), 16—40 mm. (8 twin) 3—21 inch (triple) 2 D.C.T., 2 D.C. racks. Squids in Nueva Esparta and Zulla Parsons geared turbines. 2 shafts. S.H.P.: 50,000=34·5 kts.

Complement:

2 254 (18 officers, 236 men)

Complement: 254 (18 officers, 236 men)

General

All built in Great Britain by Vickers, Barrow-inFurness, Nueva Esparta and Zulia were ordered in 1950.

Cost of these first two ships was £5,000,000, Air conditioned. Two engine rooms and two boiler rooms
served by a single uptake. The 4-5 inch guns are fully
automatic. Nueva Esparta and Zulia were refitted at the
Palmers Hebburn Works of Vickers in May—Dec, 1959,
and modernised at New York Navy Yard in 1960 to
improve anti-submarine and anti-aircraft capabilities.
Aragua was refitted by Palmers Hebburn in 1964-65.

A photograph of Nueva Esparta appears in the 196263 to 1965-66 editions.

ARAGUA NUEVA ESPARTA

ARAGU A

Pennant No. Builders D 31 D 11 D 21 Vickers Ltd., Barrow Vickers Ltd., Barrow Vickers Ltd., Barrow

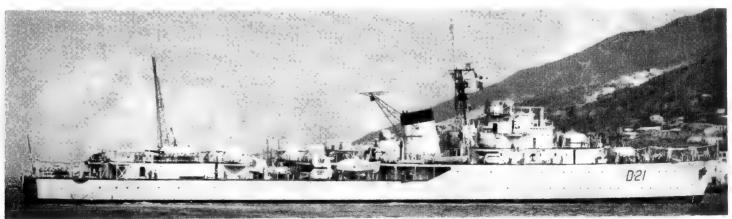
Laid down 29 June 1953 24 July 1951 24 July 1951

Launched 27 Jan. 1955 19 Nov. 1952 29 June 1953

Completed 14 Feb. 1956 8 Dec. 1953 15 Sep. 1954



1966, Venezuelan Navy, Official



6 Italian Ansaldo Built "Almirante Clemente" Class

(Light Destroyer Type)

Displacement;	1,300	tons	standard	(1,500	tons
	full I	oad)			

full load)
320\(\frac{1}{2}\) (o.a.)\\35\(\frac{1}{2}\)\\8\(\frac{1}{2}\) feet
4—4 inch (102 mm.) AA. (2
twin); 4—40 mm. AA., 8—20
mm. AA.
3—21 inch (triple)
2 Hedgehogs or squid, 4 D.C.T.
2 sets geared turbines, 2 shafts.
S.H.P.: 25,000-34 kts. Dimensions:

Tubes:

A/S weapons; Machinery;

Boilers:

5.H.P.: 25,000—34 kts. 2 Foster Wheeler 350 tons 3,500 miles at 17 kts. 162 (12 offcers, 150 men) Radius: Complement:

General
All built in Italy by Ansaldo, Leghorn, The first three were ordered in 1953. Three more were ordered in 1954, Aluminium alloys were widely employed in the building of all superstructure. All the ships are fitted with Denny-Brown fin stabilisers and air conditioned throught the living and command spaces.

Almirante José Garcia, Almirante Brion and General José de Austria were refitted by Ansaldo, Leghorn, in 1962 to improve their anti-submarine and anti-aircraft

Gunnery
The 4 inch anti-aircraft guns are fully automatic and radar controlled.

Photographs
A photograph of Almirante Clemente appears in the 1957-58 edition, of General Juan José Flores in the 1957-58 to 1961-62 editions, of General José de Austria in the 1962-63 to 1964-65 editions, and of General José Trinidad Moran in the 1962-63 to 1965-64 editions. 66 editions

Disposals of "Flower" Class
Of the former Canadian "Flower" type frigates,
Carabobo (ex-Kamsack) was lost on passage from
Canada, Libertad (ex-Battleford) ran aground off
western Venezuela on 12 Apr. 1949 and was discarded,
Independencia (ex-Dunvegan) was stricken from the
Navy List in 1953, Federacion (ex-Amherst) was
stricken in 1956, and Constitucion (ex-Algoma), Patrla
(ex-Oakville) and Victoria (ex-Wetaskiwin) were
officially deleted from the Navy List in 1962.

FAST FRIGATES

	Pennant No.	Laid down	Launched	Completed
ALMIRANTE CLEMENTE	D 12	5 May 1954	12 Dec. 1954	1956
ALMIRANTE JOSÈ GARCIA	D 33	12 Dec. 1954	12 Oct. 1956	1957
ALMIRANTE BRION	D 23	12 Dec. 1954	4 Sep. 1955	1957
GENERAL JOSÈ DE AUSTRIA	D 32	12 Dec. 1954	15 July 1956	1957
GENERAL JOSE TRINIDAD MORAN	D 22	5 May 1954	12 Dec. 1954	1956
GENERAL JUAN JOSÈ FLORES	D 13	5 May 1954	7 Feb. 1955	1956



GENERAL JUAN JOSÉ FLORES

1966, Venezuelan Navy, Official



ALMIRANTE JOSÉ GARCIA

1965, Verezuelan Navy, Official

PATROL VESSELS

12 Ex-U.S. PC Type

ALBATROS P-04 (ex-U.S.S. PC 582) ALCATRAZ P-03 (ex-U.S.S. PC 565) CALAMAR P-02 (ex-U.S.S. PC 566) CAMARON P-08 (ex-U.S.S. PC 483) CARACOL P-06 (ex-U.S.S. PC 1170)

GAVIOTA P-10 (ex-U.S.S. PC 619)
PETREL P-05 (ex-U.S.S. PC 1176)
PULPO P-07 (ex-U.S.S. PC 485)
MEJILLON P-01 (ex-U.S.S. PC 487)
TOGOGO P-09 (ex-U.S.S. PC 484)

Displacement: Displacement:
Dimensions:
Guns:
A/S weapons:
Machinery:
Complement: 280 tons standard (430 tons full load)
170 (w.l.), 173§ (o.a.)×23×10§ feet
1—3 inch d.p., 1—40 mm. AA., 5—20 mm. AA.
Provision for 4 D.C.T.
2 Fairbanks-Morse diesels, 2 shafts, B.H.P.: 2,800=20 kts, 65

General Mejillon was refitted and overhauled by Diques y Astilleros Nacionalis, Venezuela, prior to commissioning in the Venezuelan Navy, and from 1962 onwards more ships of this type underwent similar preparation to join the fleet. Altogether twelve of these former United States submarine chasers of the steel-hulled "173-ft" type were purchased from the U.S.A. in Oct. 1960 for anti-smuggling patrols, namely:—Cooperstown, PC 484, Dalhart, PC 619, Edenton, PC 1077, Gilmer, PC 565, Honesdole, PC 556, Larchmont, PC 487, Lenoir, PC 582, Minden, PC 1176, Paragould, PC 465, Rolla, PC 483, Tarrytown, PC 1252, and Tooell, PC 572, and with these the Navy is assuming Coast Guard functions.



ALBATROS (Petrel in rear)

1966, Venezuelan Navy, Official

MEDIUM LANDING SHIPS

Ex-U.S. LSM Type

LOS FRAILES T 15 (ex-U.S.S. LSM 544)
LOS ROQUES T 14 (ex-U.S.S. LSM 543)
LOS MONJES T 13 (ex-U.S.S. LSM 548)
LOS TESTIGOS T 16 (ex-U.S.S. LSM 545)

Displacement: Dimensions: Guns: Machinery: Complement:

743 tons beaching (1,095 tons full load) 196½ (w.l.), 203½ (o.a.)×34½×8½ feet 1—40 mm. AA., 4—20 mm. AA. Direct drive diesels. 2 shafts. B.H.P.: 2,800=12 kts.

All bult by Brown Shipbuilding Co., Houston, Texas, in 1945. (The former United States medium landing ships LSM 370, LSM 542, LSM 543, LSM 544, LSM 545 and LSM 548 were sold to Venezuela under MAP in Aug. 1958, but only the latter four have been commissioned in the Venezuelan Navy.)



LOS TESTIGOS

1962, Venezuelan Navy, Official

COAST GUARD VESSELS

8 "Rio" Class

RIO APURE RIO ARAUCA

RIO CABRIALES

RIO GUARICO RIO NEGRO

RIO NEVERI

Displacement: Dimensions:

38 tons 82×15×4 feet

Machinery:

2 Mercedes-Benz M.B. 820 Bb diesels 1,400 r.p.m: B.H.P.: 1,350=27 kts., 24—25 kts. cruising

All built by the Charitiers Navales de l'Estareles, Cannes, during 1954-56.



RIO CABRIALES

1956, Venezuelan Navy, Official

RIO SANTO DOMINGO

Displacement:

Dimensions; Machinery;

40 tons 70×15×6 feet 2 G.M. diesels B.H.P.: 1,250=24 kts.

Displacement:

Machinery:

40 tons $81\frac{1}{2}\times15\times7\frac{1}{2}$ feet 4 G.M. diesels. B.H.P.: 880=20 kts.

GOLFO DE CARIACO

Displacement: Machinery:

37 tons 65×18×9 feet

Diesels, Speed=19 kts.

Disposals

The survey launch Torbes, and the repair launch BT 1 were officially stricken from the list in 1962. Caribe was scrapped in 1956.

MOTOR LAUNCH

TORBES LA 12 (ex-Felipe Santiago Esteves, LC 12, ex-Brion, CS 2)

Displacement: Dimensions:

Guns:

Machinery:

47 tons $83\times16\times4$ feet 1-20 mm., 4 D.C.T. 2 petrol engines. 2 shafts. B.H.P.: 1,200=15 kts. 10

Complement:

General

General
Launched in 1937 Ex-U.S. Coast Guard cutter 56196. Acquired in 1944. Of wooden construction. Brion was renamed Felipe Santiago Esteves in 1957 when LC pennant number was allocated and renamed Torbes, No. LA 12, in 1962. Antonio Diaz LC 11 (ex-CS 1, ex-56193), Arismendi, LC 14 (ex-CS 4, ex-56194) and Briceno Mendez, LC 13 (ex-CS 3, ex-56195) were stricken in 1960. A photograph of Briceno Mendez appears in the 1952-53 to 1960-61 editions.

TRANSPORTS

PUNTA CABANA T 17

T 19

General

Three small troop carriers of about 3,000 tons with a speed of 17 knots are reported for the Army.

LAS AVES (ex-Dos de Diciembre) T-12

Displacement: Dimensions:

Machinery: Radius:

944 tons $234\frac{1}{4}$ (o.a.) $\times 33\frac{1}{2}\times 10$ feet 2 diesels. 2 shafts, B.H.P.: 1,600=15 kts. 2,250 miles at 15 kts.

General

Launched by Chantiers Dubigeon, Nantes-Chantenay, France, in 1954. Light transport for naval personnel. Originally named Dos de Diciembre. Redesignated 7 12 in 1958. Renamed Las Aves in 1961.



LES AVES

Venezuelan Navy, Official

SURVEY SHIPS

3 "Puerto" Class

PUERTO DE NUTRIAS H-02 (ex-U.S.S. Tunxis, AN 90) PUERTO MIRANDA H-03 (ex-U.S.S. Waxsaw, AN 91) PUERTO SANTO H-01 (ex-U.S.S. Marietta, AN 82)

Displacement: Dimensions: Machinery:

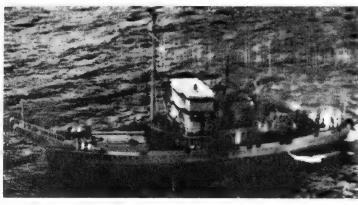
650 tons standard (785 tons full load)
146 (w.f.), 168½ (o.o.)×33§×10½ (max.) feet
Bush-Sulzer diesel-electric. 1 shaft. B.H.P.: 1,500=

kts. 46

Complement:

General General
Former United States netlayers of the "Cohoes" class. Puerto Santo was built by Commercial Iron Works, Portland, Oregon. Laid down on 17 Feb. 1945 and launched on 27 Apr. 1945. Transferred on loan from the U.S. Navy in Jan. 1961 under MAP and converted into a hydrographic survey vessel and buoy tender by the United States Coast Guard Yard, Curtisi Bay, Maryland, in Feb. 1962. The ship is unarmed, but she originally carried one 3-inch, 50 cal. dual purpose gun.

Puerto du Nutrias and Puerto Miranda were buil by Zenith Bridge Co. Duluth, Minn., launched in 1964 and completed in 1945. They were leased-loaned to Venezuela in 1963 under the Military Aid Programme.



PUERTO SANTO 1966, Venezuelan Navy, Official (U.S. Coast Guard Photo)

REPAIR SHIP

QUIRINUS ARL 39 (ex-U.S.S. LST 1151)

Displacement: Dimensions:

Guns: Machinery: Complement: 1,625 tons light, 3,960 tons trials (4,100 tons full load) 316 (w.l.), 328 (o.a.) \times 50 \times 11 $_{k}$ (max.) feet 8—40 mm. AA, (two quadruple mountings) G.M. diesels. 2 shafts. B.H.P.: 1,800=11·6 kts. 21 officers, 232 men

General

Former United States landing craft repair ship. Built by Chicago Bridge and Iron Co., Seneca, Illinois, Laid down on 3 Mar. 1945. Loaned to Venezuela in June 1962.

TUGS

FELIPE LARRAZABAL (ex-U.S.S. Tolowa, ATF 116)

Displacement: Dimensions:

1,235 tons standard (1,675 tons full load) 195 (w.l.), 205 (o.a.) \times 38½ \times 12 (mean), 15½ (max.)

feet Teet 1—3 inch, 4—40 mm. AA., 2—20 mm. AA. 4 sets diesels with electric drive. B,H.P.: 3,300=16.5 kts.

Machinery:

Complement: General

General Former United States fleet ocean tug of the "Apache" class. Built by United Engineering Co., Alameda, California, Laid down on 28 July 1943, launched on 17 May 1944, and completed on 26 Dec. 1944. Transferred on loan from the U.S. Navy in Feb. 1962, Pennant No. R. 11, The former tug Felipe Larrazabal (ex-U.S.S. Discoverer, ex-U.S.C.G. Auk, AM 38) was stricken in 1962.



FELIPE LARRAZABAL

1962, Venezuelan Navy, Official

FERNANDO GOMEZ (ex-U.S.S. Dadley, YTM 744, ex-Diana, ex-U.S. Army ST 873)

Displacement: Dimensions: Machinery:

161 tons $80\times19\times8$ feet Clark diesel, 6-cylinder, 315 r.p.m.; B.H.P.; $380\!=\!15$

kts.

General Pennant No. R 12. Crew 10. A photograph in the 1952-53 to 1957-58 editions. (The tugs Esteban Rojas, Dina and Caracas were striken from the list in 1958).

GENERAL JOSE FELIX RIBAS R 13 (ex-U.S.S. Oswegatchie, YTB 515)

Large harbour tug. Transferred on 4 June 1965 at San Diego, Calif. There is also the medium harbour tug ex-U.S.S. Sassacus (YTM-193) loaned by U.S.A.

VIETNAM

Administration

The Vietnamese Navy (Hai-Quân Viet-Nam) was established on 1 Jan. 1955.

Chief of Naval Operations: Commodore Tran Van Phan

Personnel

16,106 officers, 1966: non-commissioned officers and men (official figures)

ESCORTS

2 Ex-U.S. PCE Type

DONG DA 11 HQ 07 (ex-U.S.S. Crestview, PCE 895) NGOC HOI HQ 12 (ex-U.S.S. Brattleboro, EPCER 852)

640 tons standard (903 tons full load)
180 (w.l.), 184\(\frac{1}{2}\) (o.a.)\times 33\times \(\frac{1}{2}\) feet
1—3 inch, 50 cal. d.p.; 6—20 mm. AA,
G.M. diesels, 2 shafts, B.H.P.; 2,000=15 kts,
7 officers, 83 men Displacement: Dimensions: Guns: Machinery: Complement:

General Complement: 7 officers, 83 men
Former United States escort of the "180 ft." PCE type. Dong Da 11 was built by the Willamett Iron and Steel Corporation, Portland, Oregon. Laid down on 2 Dec, 1942, launched on 18 May 1943, and completed on 30 Oct. 1944. Served successively in the U.S. Navy as escort vessel, submarine chaser, weather ship, naval reserve training ship, and operational anti-submarine warfare development and equipment evaluation ship. Transferred from the U.S. Navy to the Vietnamese Navy at Philadelphia Naval Base on 29 Nov. 1961 and renamed Dong Da 11. Ngoc Hoi was built by Pullman Standard Car Mfg. Co., Chicago, Ill., laid down on 28 Oct. 1943, launched on 1 Mar, 1944 and completed on 26 May 1944. Formerly on experimental rescue, escort ship in the U.S. Navy, she was transferred to the Vietnamese Navy on 11 July 1966.



DONG DA 11

1963, Vietnamese Navy, Official

4 Ex-U.S. MSF Type

(ex-U.S.S. Gayety, MSF 239) 19 Mar. 1944 (ex-U.S.S. Sentry, MSF 299) 15 Aug. 1943 (ex-U.S.S. Serene, MSF 300) 31 Oct. 1943 (ex-U.S.S. Shelter, MSF 301) 14 Nov. 1943 HQ 08 HQ 09 CHI LANG 11 KU HOA NHUT TAO HO 10 CHI LINH

Displacement: 650 tons standard (945 tons full load) 180 (w.1.), 184½ (o.a.)×33×9½ feet 1—3 inch, 50 cal. d.p.; 2—40 mm. AA.; 8—20 mm. AA. (4 twin) 2 D.C.T. Diesels, 2 shafts. B.H.P.: 1,710=14 kts. 7 officers, 83 men Dimensions: Guns:

A/S weapons: Machinery:

Complement:

General
Former United States steel-hulled fleet minesweepers of the medium MSF (ex-AM) type, built by the Winslow Marine Railway and Shipbuilding Company, Winslow, Washington. Laid down on 14 Nov. 1943, 16 May 1943, 8 Aug. 1943 and 16 Aug. 1943, and completed on 23 Sep. 1944, 30 May 1944, 24 June 1944 and 9 July 1944 respectively. Launch dates above. Gayety was transferred from the U.S. Navy to the Vietnamese Navy in June 1962 under the Military Aid Program, and renamed Chi Lang 11. Sentry was converted into a patrol vessel by the Sun Shipbuilding and Dry Dock Company, Chester, Pennsylvania, the minesweeping gear having been replaced by increased depth charge storage, and transferred at Philadelphia, Pa. in Aug. 1962 under MAP. Serene and Shelter were transferred from the U.S. Navy to the Vietnamese Navy on 16 Jan. 1964. They are employed as escort patrol vessels and not as minesweepers.



KY HOA

1963, Vietnamese Navy, Official

PATROL VESSELS

2 Ex-U.S. PC Type

TUY DONG HQ 04 (ex-Trident, ex-U.S.S. PC 1143) 25 Sep. 1943 VAN DON HQ 06 Anacortes, PC 1569) 9 Dec. 1944

280 tons standard, 380 tons normal (450 tons full load)
170 (w.l.), 173\(\frac{2}{3}\) (o.a.)\times 23\times 10\(\frac{2}{3}\) feet
1—3 inch d.p., 1—40 mm.; 4—20 mm. AA,
2 D.C.; 2 R.L.
Diesel, 2 shafts. B.H.P.; 2,800=19 kts,
6 officers, 54 men Displacement: Dimensions: Guns: A/S weapons: Machinery: Complement:

General

General Tuy Dong was built by Defoe S.B. Corp., Bay City, Mich., Van Don by Letham Tuy Dong was built by Defoe S.B. Corp., Bay City, Mich., Van Don by Letham D. Smith S.B. Co. Launch dates above Laid down on 17 Apr. 1943 and 26 Sep. 1944 respectively, and completed on 16 May 1944 and 14 Mar. 1945, Tuy Dong is a former French escorteur cotier transferred to the Vietnamese Navy in 1956. Van Don was transferred at Seattle Washington, under MAP on 23 Nov. 1960. Dong Da (ex-French Ardent, ex-U.S.S. PC 1167) was stricken in 1961 and Chi Lang (ex-French Mousquet, P 633, ex-U.S.S. PC 1144) decommissioned in 1961, their names having been allocated to larger vessels. Tay Ket, HQ 05 (ex-French Glaive, ex-U.S.S. PC 1146) and Van Kiep, HQ 02 (ex-French Intrepide, ex-U.S.S. PC 1130) were officially removed from service on 10 July 1965 and 1 July 1965, respectively.



VAN DON

1966, Vietnamese Navy, Official

MOTOR GUNBOATS

22 Ex-U.S. PGM Type

DINH HAI HQ 610 HOA LU HQ 608 KEO NGUA HQ 604 KIEN VANG HQ 603

KIM QUI HQ 605 MAY RUT HQ 606 MINH HOA HQ 602 NAM DU HQ 607

PHU DU HQ 600 THAI BINH HQ 612 THI TU HQ 613 TIEN MOI HQ 601 TO YEN HQ 609 TRUONG SA HQ 611

Displacement: Dimensions: Guns: Machinery:

95 tons standard (143 tons full load) 101 (w.l.), 110 (o.a.) \times 21 \times 6 feet 1—40 mm. AA.; 2—20 mm. AA. (1 twin), 2 M.G. Diesels, 2 shafts, B.H.P.; 1,900=16 kts.

General Built in the United States, the first ten, HQ 600-609, five by J. M. Martinac Shipbuilding Corporation, Tacoma, Washington (the last of which, PGM 63, was delivered in 1963), and five by Marinette Marine Corporation, Marinette, Wisconsin, for transfer to Vietnam under the Military Aid Programme. The U.S. hull numbers of the above names were PGM 69, 62, 68, 67, 60, 59, 66, 61, 64, 72, 73, 65, 63, 70, respectively. Transfer

Eight more motor gunboats, U.S. hull numbers PGM 71, 74, 75, 76, 77, 78, 79, 80, have been or are being built in the United States for transfer to Viet Nam under MAP. Thai Binh (ex-PGM 72), Thi Tu (ex-PGM 73) and HQ 614 (ex-PGM 74) were transferred from the U.S. Navy to the Vietnamese Navy on 10 lan. 1966. Disposals

The coastal patrol craft HQ 600 (ex-GC 8) and HQ 60 (ex-GC 7, ex-SC 1020) were removed from the effective list in 1960.



PHU DU

1963, Vietnamese Navy, Official

COASTAL MINESWEEPERS

3 Ex-U.S. MSC Type

CHU'O'NG-DU'O'NG 11 HQ 115 (ex-MSC BACH DANG 11 HQ 116 (ex-MSC 283) 1 HAM TU 11 HQ 114 (ex-MSC 281)

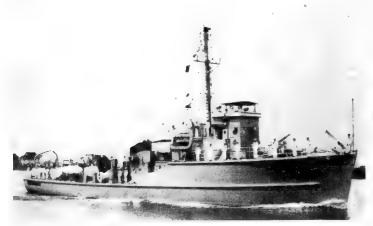
Displacement: Dimensions: Guns: Machinery:

Complement:

320 tons standard (370 tons full load)

138 (pp.), 144 (o.a.)×28×9 feet 2—20 mm. AA. 2 diesels, 2 shafts. B.H.P.: 1,200=13 kts. 4 officers, 41 men

United States coastal motor minesweepers of the "Bluebird" class, non-magnetic type, of wooden construction, transerred under the Mutual Defence Assistance Programme in 1959 and 1960.



CHU'O'NG-DU'O'NG II

1964. Vietnamese Navy, Official



HAM TU II

1960, Vietnamese Navy, Official

Disposals

Of the three coastal minesweepers of the ex-U.S. YMS type transferred from the French Navy on 11 Feb. 1954, Ham Tu HQ 111 (ex-Auberplne, ex-D 315, ex-YMS 28) was removed from the effective list in 1958, Bach Dang, HQ 113, (ex-Belledone, ex-D 318, ex-YMS 78) in 1963, and Chu'o'ng-Du'o'ng, HQ 112 (ex-Digitale, ex-D 326, ex-YMS 83) in 1964.

TRAINING SHIP

I Ex-U.S. FS Type

HOA GIANG HQ 451 (ex-Dinr An, ex-Ingenieur en Chef Girod, ex FS 287, ex-Governor Wright)

Displacement: Dimensions: Machinery:

950 tons $176 \times 32\frac{1}{3} \times 10\frac{1}{4} \quad \text{feet} \\ 2 \text{ G.M. diesels. 1 shaft. B.H.P.: 1,000=10 kts.} \\ 4 \quad \text{officers, 36 men}$

Complement: General

Former French survey vessel (ex-U.S. Army freighter), sold to Vietnam in Dec. 1955. Formerly rated as a light cargo ship (AKL), or supply vessel, but adapted and reclassified as a training ship in 1966.



HOA GIANG

1963, Vietnamese Navy, Official

LANDING SHIPS

3 Ex-U.S. LST Type

HQ 500 (ex-U.S.S. Marion County, LST 975)
HQ 501 (ex-U.S.S. Maricopa County, LST 938)
HQ 502 (ex-U.S.S. Cayugo County, LST 529)
ent: 2,366 tons beaching (4,080 tons full load)
s: 316 (w.l.), 328 (o.a.)×50×14 feet
8—40 mm. AA.
: G.M. diesels, 2 shafts, B.H.P.: 1,700=11 kts.
nt; 7 officers, 103 men CAM RANH DA NANG

Displacement: Dimensions: Guns:

Machinery:

Complement: General

General
Former United States tank landing ships of the LCT type. Cam Ranh and Da Nang
were built by the Bethlehem Steel Company, Hingham, Massachusetts: Laid down on
1 Dec. 1944 and 14 July 1944, launched on 6 Jan. 1945 and 15 Aug. 1944, and
completed on 3 Feb. 1945 and 9 Sep. 1944, respectively. Transferred from the U.S.
Navy to the Vietnamese Navy in June 1962 under the Military Aid Programme.
Thi Nai, built by Jeffersonville B. & M. Co., Jefferson, Ind., laid down on 8 Nov.
1943 launched on 17 Jan. 1944 and completed on 29 Feb. 1944 was transferred to
Vietnam at Guam on 16 Dec. 1963.



CAM RANH

1963, Vietnamese Navy, Official

7 Ex-U.S. LSM Type

HAU GIANG HQ 406 (ex-LSM 276)
HAN GIANG HQ 401 (ex-LSM 9012,
ex-U.S. LSM 110)
HAT GIANG HQ 400 (ex-LSM 9011,

LAM GIANG HQ 402 (ex-LSM 226)

ex-U.S. LSM 335) Displacement: Dimensions: Guns: Machinery: Complement: General 5 officers, 70 men

General

Landing Ships Medium designed primarily to carry assault troops. First four were transferred to the French Navy for use in Indo-China. Jan. 1954. LSM 9011, 9012 transferred to Vietnam Navy, Dec. 1955. LMS 9014, 9017, 9018, returned to U.S.A. in 1955. Oceanside, LSM 175, was transferred to Vietnam under MAP at Los Angeles, California, on I Aug. 1961, and LSM 313 in 1962. Hau Glang (ex-LSM 276) was transferred from the U.S.A. to Vietnam, on 10 June 1965. Hat Glang was converted into a hospital ship (LSMH) in 1966.



HAN GIANG

1965, Vietnamese Navy, Official

7 Ex-U.S. LSSL Type

/ Ex-U.S. LSSL Type

DOAN NGOC TANG HQ 228 (ex-LSSL 9) 15 Sep. 1965

LE YAN BINH HQ 227 (ex-LSSL 10) 15 Sep. 1965

LINH KIEM HQ 226 (ex-Arquebuse, ex-LSSL 9022)

LUU PHU THO HQ 229 (ex-LSSL 101) 2 Oct. 1965

NO THAN HQ 225 (ex-Framee, ex-LSSL 105)

NGUYEN DUC BONG HQ 231 (ex-LSSL 129) 19 Feb. 1966

NGUYEN NGOC LONG HQ 230 (ex-LSSL 29) 19 Feb. 1965

Displacement: 227 tons standard (383 tons full load)

Dimensions: 158×233×53 feet

Guns: 1—3 inch, 4—40 mm., 4—20 mm., 4 M.G.

Machinery: Diesel. 2 shafts. B.H.P.: 1,600=14 kts.

General

General

General

Of the LSSLs transferred from the U.S.A. in 1951 for service in Indo-China,
Arquebuse was sold by France to Vietnam in 1955 and Frame was transferred from
France to Vietnam in 1957. The dates of more recent transfers of LSSLs from the
United States Navy to the Vietnamese Navy are shown after the names above;
these were formerly transferred to Japan by the U.S.A.; they were renamed after
Vietnamese officers who died for their country.



NO THAN

1955, Vietnamese Navy, Official

Landing Ships-contd.

5 Ex-U.S. LSIL Type

LO! CONG HQ 330 (ex-LSIL 9034) ex-U.S. 699 LONG DAO HQ 327 (ex-LSIL 9029) ex-U.S. 698 TAM SBT HQ 331 (ex-LSIL 9033) ex-U.S. 871 THAN TIEN HQ 328 (ex-LSIL 9035) ex-U.S. 702 THIEN KICH HQ 329 (ex-LSIL 9038) ex-U.S. 872

Displacement:

227 tons standard (383 tons full load)

Guns:

227 tons standard (383 tons full load)
158×225/×5½ feet
1—3. inch, 1—40 mm., 2—20 mm., 4 M.G. and 4 Army mortars (2—3·1 inch, 2—60 mm.)
Diesel, 2 shafts. B.H.P.: 1,600=14·4 kts.
6 officers, 49 men Machinery:

General

General Former U.S. ships. 9030-9033 were ceded to France at Bremerton, Washington, on 2 Mar. 1951, and 9029 and 9034-39 in 1953 and stationed in Indo China. Similar to preceding class. LSIL 9030 (ex-715) was scapped in 1955. The above vessels were transferred from France to Vietnam in 1956.



THIEN KICH

1962, Vietnamese Navy, Official

LANDING CRAFT

7 Ex-U.S. LCU Type

HQ 533 (ex-*LCU* 9076) ex-U.S. 1479 **HQ 534** (ex-*LCU* 9089) ex-U.S. 1480 **HQ 535** (ex-*LCU* 9086) ex-U.S. 1221 **HQ 537** (ex-LCU 9887) ex-U.S. 1501 **HQ 538** (ex-LCU) ex-U.S. 1594

Displacement: Dimensions: Guns: Machinery:

180 tons light (360 tons full load)
115 (w.l.), 119 (o.a.)×34×6 feet
2—20 mm. AA.
3 diesels, 3 shafts, B.H.P.; 675=10 kts,

Built in the U.S.A. and transferred under MDAP, Acquired in 1954 from French reparations. All LCT (7) type except HQ 535 (LCT (6) type). The landing ships and landing craft from "naval attack divisions" (Division navale d'assault) most of which have one LSSL or LSIL as flagships.



HQ 536

1962, Vietnamese Navy, Official

HQ 536 (ex-LCU 9074, ex-U.S. 1466)

HQ 539 (ex-LCU, ex-U.S. 1502

Displacement: Dimensions:

160 tons light (320 tons full load) 119 (o.a.) \times 33 \times 5 feet 2—20 mm. AA., 3 diesels. 3 shafts. B.H.P.: 675=10 kts.

General gramme.

Built under the offshore programme and transferred under the Military Aid Pro-

There are also 32 landing craft (commandament) of the LCM Type, 10 light monitors, 52 LCVP, and 46 FOM. A total of 150 boats of these types were assigned to the River Force in June 1965.

AUXILIARY GUNBOATS

General

A Coastal Force of 500 motorised junks has been organised with United States assistance. This junk fleet is armed with '50 and '30 cal machine guns. The Junk Force was established on 12 Apr. 1960, with 100 junks, 28 groups of junks having been formed by June 1962. Mass production of improved design junks was undertaken to control infiltration of South Vietnam coastal waters by North Vietnamese forces. New junks are fitted with armour plate and fibre glass to protect the wooden hull against marine borers, and have diesels equal to speeds up to 15 knots. In June 1965 there were 513 junks crewed by nearly 4,000 men. The remaining sail junks are being disposed of.

The Coastal Force (ex-Junk Force) has become part of the Vietnamese Navy, and is no longer a para-military organisation (effective July 1965).

OILERS

HQ 470 (ex-L'Aulne, ex-U.S. YOG 80)

450 tons 700 tons deadweight Capacity:

General

HQ 470 is a former U.S. oiler ceded to France on 2 Mar. 1950, and transferred from the French Navy to the Vietnamese Navy in 1956, and rated as a regional supply ship. HQ 471 was transferred from the U.S.A. to Vietnam in 1963.

SUPPLY VESSELS

HA LONG HQ 452

LONG HAI HO 453

General
Supply vessels of the trawler type taken into national service.

WATER CARRIER

Former United States self-propelled water barge transferred under the Military Aid Program,

TUGS

YTM 193 (ex-U.S.S. Sassacus)

YTM 385 (ex-U.S.S. Wannalancet)

HO 471 (ex-YOG 33)

Medium harbour tugs transferred to Vietnam by the U.S.A. in Jan. 1963. (The large harbour tug U.S.S. Oswegatchie, YTB 515, was transferred to Venezuela and not to Vietnam as originally intended.)

HQ 9500 (ex-YTL 152) HQ 9501 (ex-YTL 245)

HQ 9502 (TID type)

HQ 9503 (ex-YTL 200) HQ 9504 (ex-YTL 206)

YTL 590

YTL 203 YTL 423 YTL 446

YTL 451

YTL 455

General

Former United States small harbou tugs transferred from the U.S. Navy under the MAP. Nos. 423, 446, 451, 455 and 590 were transferred in Jan. 1963.

VIETNAM (NORTH)

Personnel

1966: 2,200 (200 officers and 2,000 men)

PATROL VESSELS

3 U.S.S.R. "S.O.I." Type

215 tons light, 250 tons normal
138 (pp.), 147 (o.a.)×20×10 (max.) feet
4—25 mm. (2 twin mountings)
4 ahead throwing rocket launchers, 2 D.C.T.
3 diesels B.H.P.: 3,500=28 kts. Displacement: Dimensions:

Guns: A/S weapons: Machinery: 30

Complement:

Four submarine chasers of the Soviet "S.O.I." class transferred to North Vietnam, two in 1960-61 and two in 1964-65, but one was sunk by U.S. Navy aircraft 20-24 N, 106-56 E on 1 Feb. 1966.

MOTOR TORPEDO BOATS

3 U.S.S.R. "P 6" Type

50 tons standard 82×16½×5½ feet 2—25 mm, AA. 2—21 inch (single) Displacement: Dimensions: Guns: Tubes: Machinery: Speed=40 kts.

General

Wooden hulled MTBs of the "P 6" class built in China and transferred in 1957 and 1964.

9 U.S.S.R. "PA 4" Type

Displacement: Dimensions:

50 tons standard

Machinery:

85½×20×6 feet 4—25 mm. AA. (2 twin) Diesels. B.H.P.: 2,000=42 kts.

General

Aluminium hulled MTBs of the Soviet "PA 4" class transferred from the U.S.S.R. in 1961 and 1964. A fast patrol boat, PTF 1, is reported.

Three motor torpedo boats were sunk off Haiphong by U.S. Navy aircraft on 1 July 1966, and four were destroyed in the Gulf of Tonkin by U.S. Navy aircraft on 7 July 1966.

MOTOR GUNBOATS

26 U.S.S.R. "Swatow" Type

Displacement: Dimensions: Guns:

67 tons full load $83\frac{1}{2}\times20\times6$ feet 2—37 mm., 2—20 mm. 8 depth charges 4 diesels. B.H.P.; 4,800=40 kts. 17

A/S weapons: Machinery: Complement:

General

Some 30 "Swatow" class motor gunboats built in China were transferred in 1958, and 20 in 1964 to replace those lost in action. Pennant numbers of 3 digits in a 600 series. Losses

A motor gunboat was destroyed by U.S. Navy aircraft on 31 Aug. 1965. Five were sunk by air strikes on 2 Mar. 1965. Previous losses include eleven MGB/MTBs, see full details in the 1965-66 edition.

MINESWEEPERS

General

4 Patrol Type

Four vessels for sweeping, patrol and general purpose duties have been reported.

Administration

Assistant Secretary of State for National Defence for the Navy: Admiral Mate Jerkovic

Commander-in-Chief of the Fleet: Vice-Admiral Ljubo Truta

VUGOSLAVIA

Defence Attaché in London: Colonel Branko Kobali

Naval, Military and Air Attaché in Washington: Colonel Milan Mavrić

Personnel

1966: 27,000 officers and ratings

Mercantile Marine

Lloyd's Register of Shipping: 353 vessels of 990,846 tons gross

"Sutjeska" Class

SUTJESKA NERETVA ULIANIK

Displacement:

550 tons standard, 700 tons surface, 945 tons submerged $197\times21\frac{1}{3}\times16$ feet

Dimensions:

6—21 inch
Diesel, electric motors, H.P.:
1,800=14 kts. surface, 9 kts.
submerged Tubes: Machinery:

4,800 miles at 8 kts. Radius

Complement:

General

General
Sutjeska was launched on 28 Sep. 1958 at Uljanik
Shipyard, Pula. The first submarine to be built in a
Yugoslav yard. Commissioned on 16 Sep. 1960.
Pennant Numbers
Numbered in an "810" series, see 811 and 812

in photographs.

Disposal

The old modified "L" type submarine Tara (ex-Nebojsa) was scrapped in 1958.

SUBMARINES (Podmornice)



ULJANIK No. 812

1966, Yugoslavian Navy, Official



SUTJESKA

1963, Yugoslavian Navy, Official

"Sava" Class

SAVA (ex-Nautilo) Pennant No. 802

747 tons standard, 905 tons surface, 1,068 tons submerged 207½×22½×16 feet 6—21 inch H.P.: 2,400=16 kts. (surface), 8 kts. (submerged) 12,000 miles at 8.5 kts. Displacement: Dimensions: Tubes:

Machinery: Radius:

Complement: General General
Formerly Italian. Built by C.R.D.A. Monfalcone. Laid
down on 3 Jan. 1942. Launched on 20 Mar. 1943.
Completed on 26 July 1943. Sunk on 9 Jan 1944.
Salvaged. Reconstructed with new conning tower and no guns



SAVA

Pennant No.

R 21 R 22

1966, Dr. Giorgio Arra

(Razarac) DESTROYERS

KOTOR (ex-Kempenfelt, ex-Valentine; Leader)
PULA (ex-Wager)

2 Ex-British "W" Class

1,730 tons standard (2,525 tons Displacement:

Dimensions: Guns:

A/S weapons:

1,730 tons standard (2,525 tons full load)
339½ (pp.), 362½ (o.a.)×35½
×17 feet
4—4.7 inch, 3—40 mm. AA.
(1—40 mm. in Kotor)
4 D.C.T.
8—21 inch
Parsons geared turbines S.H.P.:
40,000=36.75 kts. (designed),
31.25 kts. sea speed
2 Admiralty 3-drum type
580 tons
2,800 miles at 20 kts. Tubes: Machinery:

Boilers: Oil fuel:

Radius: Complement: 186

General
Former British destroyers of the "W" class. Purchased during 1956 and towed to Yugoslavia in Oct.
1956 to be refitted in a northern Yugoslavian shipyard.
Kotor was re-commissioned on 10 Sep. 1959 and Pula
by the end of 1959 the end of 1959.

Sister ships of Wessex, renamed Jan van Riebeeck and Whelp, renamed Simon van der Stel, in South African Navy, and original sister ships of Wakeful,

Builders John Brown & Co. Ltd., Clydebank John Brown & Co. Ltd., Clydebank Laid down 24 June 1942 20 Nov. 1942

Launched 9 May 1943 1 Nov. 1943

Completed 25 Oct. 1943 14 Apr. 1944

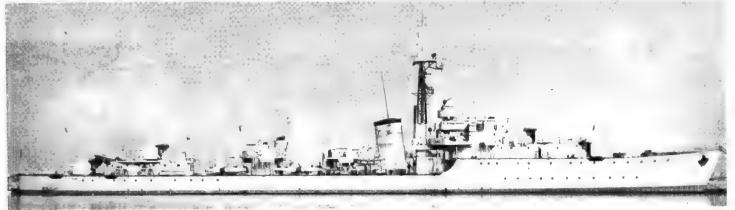


PULA

Whirlwind and Wizard in the British Navy, Wrangler, in the South African Navy, converted frigates, see earlier pages

Appearance One director on bridge not so large as in later 1962, Yugoslavian Navy, Official

classes. Tall foremast in both. Single Bofors mounting high up abaft funnel in superfiring position. A starboard view of *Pula* appears in the 1957-58 edition, and another photograph of *Kotor* in the 1957-58 to 1961-62 editions.



Destroyers—contd.

I "Split" Class

SPLIT (ex-Spalato, ex-Split) 1.1

Builders: Laid down: Brodogradiliste "3.Maj", Rijeka July 1939 Launched: Completed: 1940 4 July 1958

Displacement:

Dimensions:

Guns: Tubes: A/S weapons: Machinery:

2,400 tons standard (3,000 tons full load)
376\frac{1}{2}\times 36\frac{1}{2}\times 12\frac{1}{2}\f

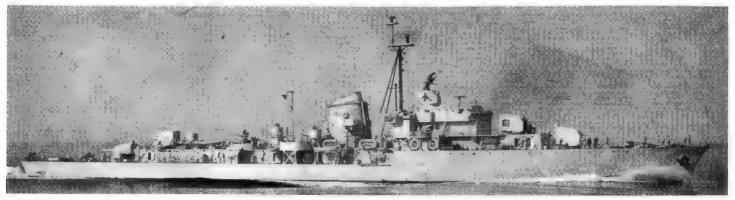
Boilers: Oil fuel: 590 tons

Oil tuel:

General

The original ship was laid down by Chantieres de Loire, Nantes, in 1939, at Split Shipyard, Launched in 1940. Carried out extensive trials in 1958. Ready for operational service in 1959. The original design pro-

vided for an armament of 5—5.5 inch guns, 10—40 mm. AA. guns, and 6—21.7 inch torpedo tubes (tripled), but the plans were subsequently modified. The shaft horse power was also reported variously as 60,000 and 70,000, equal to 38 kts. (max.) Mine capacity: 40.



SPLIT

Yugoslavian Navy, Official

FAST FRIGATES (Light Destroyer Type)

BIOKOVO (ex-Aliseo) TRIGLAV (ex-Indomito)

RE 52 RE 51

Builders Navalmeccanica, Castellammare Cantiere del Tirreno, Riva Trigoso

Laid down 16 Sep. 1941 10 Jan. 1942

Launched 20 Sep. 1942 6 July 1943 Completed 28 Feb. 1943 4 Aug. 1943

2 "Triglay" Class

Displacement:

1,204 tons standard (1,709 tons 1,204 tons standard (1,709 tons full load)
270½ (pp.), 293 (o.a.)×32½
×9½ feet
3—3-9 inch, 47 cal., d.p., 11—
20 mm, AA. (Biokoa: 2—3-9 inch, 10—20 mm, AA.) 4 D.C.T.
4—18 inch (2 twin)
2 Tosi geared turbines. 2 shafts.
5.H.P.: 16,000=26 kts.
2, of 3-drum type
430 tons
3,500 miles at 15 kts.

Dimensions:

Guns:

Tubes:

Machinery: Rollers:

Radius:

Complement: 175

Ex-Italian large oceangoing torpedo boats or escort destroyers. A photograph of *Triglav* appears in the 1954-55 to 1957-58 editions.



BIOKOVO

Yugoslavian Navy, Official

I "Durmitor" Class

Displacement:

Dimensions: Guns:

797 tons standard (1,033 tons full load)
265½×27½×9 feet
2—3-9 inch (100 mm., 47 cal.)
AA., 10—20 mm., 70 cal. AA.
6—18 inch (2 triple)
2 Tosi geared turbines, 2 shafts,
S.H.P.: 22,000=31·5 kts,
2. of 3-drum type
200 tons
1,800 miles at 15 kts, Tubes: Machinery:

Boilers: Oil fuel:

Radius: Complement:

General

General
Former Italian oceangoing torpedo boat or small destroyer. The name Ucka means the Monte Maggiore near Abbzia. The ship was damaged on the slip by bombs on 20 Feb. 1945 (she was named TA 47 by the Germans) but was rebuilt and completed by Yugoslavia.

Durmitor (ex-Ariete) was removed from the active list in 1963.

No. RE 54 Builders C.N. Quarnaro, Fiume Laid down 5 Sep. 1942



MINELAYER Training Ship (Skolski Brodovi)

Ex-Italian Type

M 11 GALES (ex-Kuchuck, ex-Ramb III)

Displacement: Measurement:

5,182 tons 3,667 tons gross 385×51×18 feet 2—66 mm. single (saluting) 2 diesels. 2 shafts=17 kts.

Dimensions: Guns: Machinery:

General
Formerly Italian. Launched in 1938. Refloated and completed in 1952. Adapted for minelaying. Now serving as a training ship. Also serves as the Presidential Yacht. Former armament was four 3.5 inch guns, four 40 mm. guns, and 24-20 mm. (six quadruple). Disposal
The mirelayer (Minopolagari). Telegrapa M. 21 (ex.

The mimelayer (Minopolagaci), Zelengora, M 21 (ex-Orao, ex-M 97)—while in Italian hands named Vergada —was scrapped in 1962.



GALEB

1966, Yugoslavian Navy, Official

PATROL VESSELS

I Yugoslavian Built

MORNAR

Displacement: Dimensions: Guns: A/S weapons: Machinery:

330 tons standard (400 tors full load) $170\times23\times6\frac{1}{2}$ feet 2—3 inch, 2—40 mm. AA., 2—20 mm. AA. 2 rocket launchers, Mark 22 4 diesels. B.H.P.; 3,240=18 kts. 3,000 miles at 12 kts.

Radius: Complement:

General Completed on 10 Sep. 1959. Design is basically similar to that of PBR 581.



MORNAR

1962. Yugoslavian Navy, Official

I French-Built U.S. Offshore Type

PBR 581 (ex-P6)

Displacement; Dimensions: Guns:

A/S weapons: Machinery: Radius: Complement:

325 tons standard (400 tons full load)
170 (pp.)×23×6½ feet
2—40 mm. Bofors AA., 2—20 mm. AA.
1 Hedgehog. 4 D.C.T., 2 D.C. racks
4 Pielstick SEMT diesels. B.H.P.: 3,240=18·7 kts.
3,000 miles at 12 kts., 2,000 miles at 15 kts.

General

U.S.A. offshore procurement. Ordered in France. Built by F. C. Mediterranee (Graville). Launched on 1 June, 1954. Transferred to Yugoslavia in 1956. Disposals

The ex-Austrian torpedo boat (torpiljarke) Cer, 92 (ex-T 5, ex-T 87) was scrapped in 1962. Her sister ship Golesnica, 91 (ex-T 1, ex-T 76) was officially stricken from the list in Oct. 1959.



PBR 581

Yugoslavian Navy, Official

COASTAL MINESWEEPERS

3 French-Built U.S. Offshore Type. I Yugoslav

HRABRI M 151 (ex-D 25) SLOBODNI M 153 (ex-D 27)

SMELI M 152 (ex-D 26) SNAZNI M 154

Displacement: Dimensions: Guns.

Machinery:

365 tons standard (424 tons full load)
140 (pp.), 152 (o.a.)×28×8½ feet
1—40 mm. Bofors AA., 1—20 mm. Oerlikon AA.
SIGMA free piston generators, 2 shafts.
B.H.P.: 2,000=15 kts.

Oil fuel:

48 tons 3,000 miles at 15 kts.

Radius: Complement: 40

First three were built in France by A. Normand as United States "off-shore" orders, launched on 27 Feb. 1956, 26 May 1956 and 26 June 1956, respectively, and allocated to the Yugoslav Nayy at Cherbourg in Sep. 1957. Snazni was built in Yugoslavia in 1960.

A photograph of Smell appears in the 1958-59 to 1965-66 editions



SLOBODNI

1966, Yugoslavian Navy, Official

MOTOR TORPEDO BOATS (Torpedni Čamci)

96 Type "108"

170 174 1**9**9 120 125 164 165 167 102

55 tons standard (60 tons full load) 69 (pp.), 78 (o.a.) $\times 21\frac{1}{3} \times 7\frac{3}{4}$ feet Displacement: Dimensions: 69 (ρρ.), 78 (ο.α.)×21½×7¾ feet 1—40 mm. AA., 4—12·7 mm. MG. Guns: Tubes: Machinery:

3 Packard petrol motors. 3 shafts, B.H.P.: 5,000= Complement:

General

The total number of motor torpedo boats is reported to be nearly 100. Under future programmes it is planned to raise the total to 110. Transfers

Two of this class were transferred to Ethiopia in 1960 and renamed Barracuda, P 22 and Shark, P 21.



MTB 174

1962, Yugoslavian Navy, Official



MTB 119

Yugoslavian Navy, Official

Disposals

Disposals

Of the eight motor torpedo boats of the American type MT 8 (ex-PT 217) was scrapped in 1955 and MT 1 (ex-PT 201), MT 2 (ex-PT 204), MT 3 (ex-PT 207), MT 4 ex-PT 208, MT 5 (ex-PT 209), MT 6 (ex-PT 211) and MT 7 (ex-PT 213) were scrapped in 1966.

The German type motor torpedo boats 391 (ex- Durmitor) and 392 (ex-Kaj-makcalan) were removed from the effective list in 1963.

MINING TENDERS (Tenderi minopolagaci)

3 Yarrow Class

M 31 (ex-Meljine)

M 32

M 33 (ex-Mljet)

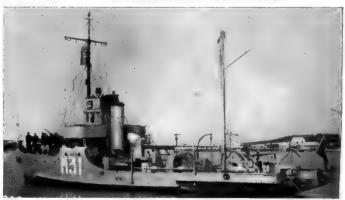
Displacement: Dimensions: Guns:

130 tons standard 174×26¼×13 feet 1—47 mm.

Machinery: Complement:

Triple expansion, 2 shafts. H.P.: 280=9 kts.

Built by Yarrow's Adriatic Yard, Kraljevica, Launched in 1931. While in Italian hands M 31 and M 33 were named Solto and Meleda, respectively.



M 31

1955. Official

RIVER PATROL VESSEL

KRAJINA (ex-Dragor)

Displacement: Dimensions: Machinery:

250 tons $164\times26\frac{1}{4}\times3\frac{1}{4}$ feet H.P.; 480=10 kts.

General

Launched in 1923. This vessel formerly served as the Royal Yacht on the Danube.

PATROL BOATS

"Kraljavica" Class Submarine Chasers 16 PBR 501-508 and 509-516 Types

PBR 509 PBR 510

General

This second batch of submarine chasers launched in 1957-59 are an improvement on the PBR 501-508 series below, but of similar basic particulars.



PBR 512

1959, Yugoslavian Navy, Official

PBR 503 PBR 504

PBR 505 PBR 506

Displacement: Dimensions:

190 tons standard (245 tons full load)

... standard (245 tons full load) 134 \pm 20 \pm 7 feet 1—3 inch, 1—40 mm. AA., 4—20 mm. AA. D.C. Guns: A/S weapons: Machinery: Diesel 2 shafts, B.H.P.; 3,300=20 kts.

Oil fuel: Radius:

15 tons 1,500 miles at 12 kts.

Complement:

General These submarine chasers of the "500" class were launched from 1953 to 1956.



PBR 501

1966, Yugoslavian Navy, Official

SALVAGE VESSEL (Brod za Spasavanje)

PS II SPASILAC

Displacement: Dimensions: Machinery:

740 tons $174\times26\frac{1}{4}\times13^{\circ}$ feet Triple expansion. H.P.: 2,000=15 kts.

Built by Howaldt, Kiel. Launched in 1929. Name means "Salvador." While in Italian hands she was called Intangible.



SPASILAC

1966, Yugoslavian Navy, Official

YACHT (Jahta)

ISTRANKA (ex-Vilax-Dalmata)

Displacement: Machinery:

230 toms H.P.: 325=12 kts.

General

Istranka means Nymph. Named Fata whilst in Italian hands during 1941-45.

Disposals of River Gunboats
It was officially stated in 1966 that the two RPC 200 type river gunboats were scrapped.

The river monitor Sava (ex-Bodrog) was scrapped in 1962.

Disposal of Submarine Depot Ship
The submarine depot ship (Matica za podmornice) Miner, PB 21 (ex-Sitnica, exNajade)—while in Italian hands named Curzola—was scrapped in 1962.

INSHORE MINESWEEPERS (Minolovci)

12 Type 101

90 tons standard (95 tons full load)

Displacement: Dimensions: Guns:

82×19½×6¼ feet 1—40 mm., 1—20 mm. Diesel. B.H.P.: 135-175=12 kts.

Machinery: General

M 103 M 105

Built during 1950-56 in Yugoslav shipyards. Reported to vary in detail. Some used for patrol duties. Of this class M 101, M 102, M 104, M 107, M 108 and M 110 were scrapped, it was officially stated in 1966.



M 109

Yugoslavian Navy, Official

4 U.S. MSI Type

MSI 98

MSI 99

MSI 101

General
The above are the U.S. Navy hull numbers of boats building for transfer to Yugoslavia under the Military Aid Programme.

6 Ex-Italian Type 301

ML 301 (ex-RD 6) ML 302 (ex-RD 16)

ML 303 (ex-RD 21) ML 304 (ex-RD 25) 151 to 156 tons

ML 305 (ex-RD 27 ML 306 (ex-RD 28

Displacement: Dimensions: Guns:

116×19¼×6 feet 1—3 inch AA.

Triple expansion, I.H.P.: 750=10 kts.

Machinery:

Formerly Italian. Launched in 1917-19. ML 307 (ex-RD 29) was removed from the effective list in 1955. A hhotograph of M 301 appears in the 1955-56 to 1965-66 editions.

RIVER MINESWEEPERS

14 RML 300 Type

M 305 M 306

M 309 M 310

M 313 M 314 M 311 M 312

Displacement: Machinery:

38 tons 1-20 mm. Speed=12 kts.

All these boats were launched in 1951-53. A photograph of M 313 appears in the 1956-57 and 1957-58 editions.

SAIL TRAINING SHIP

JADRAN

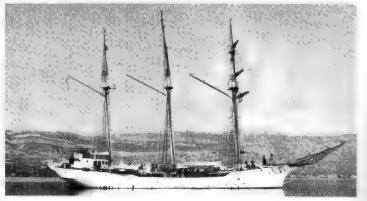
M 301 M 302

Displacement: Displacement Sail area:

720 tons
190×29¼×13¾ feet
8,600 sq. ft.
1 Linke-Hofman Diesel H.P.: 375=8 kts.

Machinery:

Launched in 1932. Accommodation for 150 Cadets. Name means "Adriatic." While in Italian hands she was named Marco Polo.



IADRAN

1966, Yugoslavian Navy, Official

DESPATCH VESSEL

JADRANKA (ex-Bjeli Orao)

Displacement: Dimensions:

567 tons standard (660 tons full load) 197 (pp.), $213\frac{1}{4}$ (o.a.) $\times 26\frac{1}{2} \times 9\frac{1}{3}$ feet 2—40 mm. AA., 2 M.G. 2 Sulzer diesels. B.H.P.: 1,900=18 kts.

Guns: Machinery:

Built by C. R. dell'Adriatico, San Marco, Trieste; launched on 3 June 1939. Was used as Admiralty yacht and yacht of Marshall Tito. While in Italian hands was named Alba for some days only, then Zagabria.



IADRANKA

1966, Dr. Giorgio Arra

D 230

General

LANDING CRAFT

Displacement:

circa 500 tons

General

Capable of carrying at least two, possibly three of the heaviest tanks. Unlike other tank landing craft in that the lower part of the stern drops to form a ramp down which the tanks go ashore, underneath the prow, which is rigid.

New construction includes some landing craft of LCA, LCT and Siebel-ferry types.



D 230

courtesy B. Hinchliffe, Esq.

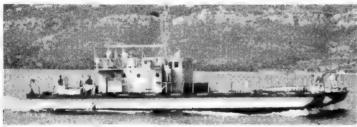
Catamaran Type

Displacement:

circa 50 tons

General General

A smaller craft consisting of two pontoons some feet apart, secured to each other by cross-girders on which stand the bridge and cabins, etc. This vessel appears to be capable of carrying one medium tank, to be-put ashore by two bridge members which can be seen quite clearly, folded back on the decks.



Catamaran type

courtesy B. Hinchcliffe, Esq.

DTK 221

Displacement; Dimensions; Guns:

Machinery: Complen

410 tons $144\frac{1}{3} \times 19\frac{2}{3} \times 7$ feet 1—20 mm. AA., 2-Speed=10 kts.



D 221

Yugoslavian Navy, Official

D 206 (ex-MZ 713)

D 219 (ex-MZ 717)

D 204

Displacement: Guns: Machinery:

225 tons and 239 tons 1—20 mm. AA., 2 M.G. AA. Speed = 11 kts.

Ex-Italian landing craft. Launched in 1942. Capable of carrying three tanks. A photograph of D 219 appears in the 1959-60 to 1965-66 editions.

D 203

Displacement:

Guns: Machinery: 220 tons $1-3\cdot4$ inch (88 mm.), 2-20 mm. AA. Speed = 10 kts.

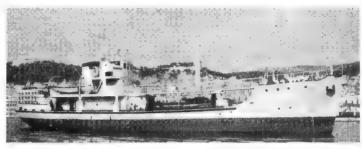
Ex-German landing craft. Two landing craft were launched in 1956.

PN 17

OILERS

Displacement: Dimensions: Machinery:

420 tons standard (650 tons full load) $141\frac{1}{2}\times22\frac{1}{2}\times13\frac{1}{2}$ feet B.H.P.: 300=7 kts.



PN 17

1962, Yugoslavian Navy, Official

4 PN 13 Type

PN 13 (ex-Lovcer)

Displacement: Machinery:

560 to 695 tons Speed=8.5 kts.

General

PV 13 (ex-Lovcer) was launched in 1932. For fleet servicing and freighting.

ULIESURA

Displacement:

KIT

250 tons

TRANSPORTS

2 PT 71 Type

Displacement:

310 tons standard (428 tons full load) $141\frac{1}{2}\times22\frac{1}{2}\times16$ feet B.H.P.: 300=7 kts.

Dimensions: Machinery:

General The transport Tunj, PT 21 (ex-Krk, ex-Kt. 6)r was removed from the list in 1963.



PT 71

1966. Yugoslavian Navy, Official

WATER CARRIERS (Vodonosci)

PV A

PV 11

PV 12

General

There are 8 water carriers of various types. Also PT 12 and PO 54.

TUGS (Remorkeri)

PR 52 (ex-San Remo)

Displacement:

Machinery:

170 tons H.P.: 350=9 kts.

General

Former Italian tug and multi-purpose vessel. Launched in 1937.

PR 58 (ex-Molara) Displacement:

Machinery:

118 tons H.P.: 250=8 kts.

Former Italian tug, Launched in 1937, now used as general transport and towing PR 51 (ex-Porto Conte)

Displacement:

226 tons

Former Italian tug. Launched in 1936. A photograph appears in the 1951-52 to 1957-58 editions.

PR 55 (ex-Snazi)

Displacement: Machinery:

100 tons H.P.: 300=10 kts.

General
Launched in 1917. Name means "Strong." The Italian name was Resistance.

PR 54 (ex-Ustrajni)

Displacement: Machinery:

160 tons H.P.: 250=9 kts.

aunched in 1917. Name means "Durable." The Italian name was Duratero.

LR II (ex-Basiluzzo)

Displacement. Machinery:

108 tons H.P.: 130=8 kts.

General

Former Italian tug. Launched in 1915. There is also the very old tug PP 1 (ex-Marijivi)—name means "Industrious", launched in 1898, 130 tons displacement, with machinery of 300 H.P. and a speed of 12 kts; and RRM 11 (ex-Fruska Gora), river tug, general utility craft and service personnel transport.

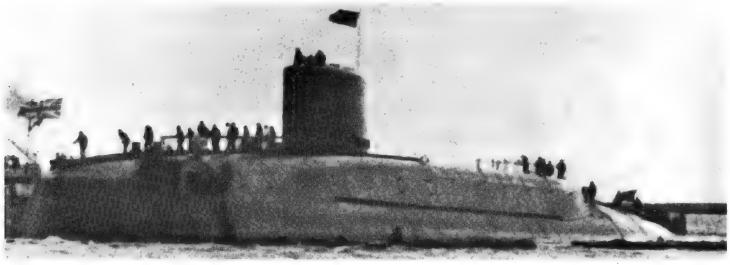
ALL THE WORLD'S FIGHTING SHIPS

		Heavy Aircraft Carriers	Large Aircraft Carriers	Light Aircraft Carriers	Escort Carriers, Heli- copter Carriers, Com- mando Carriers	Com- mand Ships	Nuclear Powered Subma- rines	Convertion- ally Powered Subma- rines	Crusers	Leaders, Large Destro- yers. Frigates (DLG)	Destro- yers	Destro- yer Escorts, Friga- tes, Escorts (and APD)	Corvettes (including PCE)	Patrol Vessels, Subma- rine Chosers (PC)	Motor Torpedo Boats, Motor Gun- boats, Fast Patrol Boats	Fleet Mine- layers, Fast Mine- layers, Mine Support Ships	Coastal Mine- layers	Sea- plane Tenders
	ARGENTINA			1				2	3		9	4	3	8	1			-1
A	USTRALIA			1	1			1		3	6	10						
	ELGIUM			_									2					- 1
	RAZIL			1				3	2		9 1	6 .	10	4	70			
	URMA							,			,	1	1	5	5			
	ANADA			1				3			3	30	,			ļ		
	EYLON	ŀ										1						- 1
	HILE							2 30	2		4	1	2	2	4			- 1
	COLOMBIA							30			4	16 2		30	220			
	UBA											4	2	12	36			
D	ENMARK							4				6	4		16	4	4	
	OMINICAN R										2	3	5	7	:			- 1
	CUADOR INLAND											3	2	4	13		2	- 1
	RANCE			3	1			21	2	2	18	29		15	13		2	
	ERMANY (E)											4		41	52			
	ERMANY (W)							11			10	24	7		47	3		- 1
	REECE			1				3			8	4 14		13			2	- 1
	NDIA NDONESIA			,				12	2		3 7	11	3	12	64			- 1
	RAN											1	3					- 1
15	RAQ													3	12			
	RAEL							4			2	1 11		1	12 14			- 1
	APAN							6 7	3	4	4 22	18	21	7 20	10		2	- 1
	OREA (N)													15	21		-	- 1
	OREA (S)										ī	8	9	6	2			
	ALAYSIA EXICO											1 8	21	1	4			- 1
	ETHERLANDS			ī				6	2		12	7	12					-1
N	EW ZEALAND								1			5		1				- 1
	ORWAY							10	.		2	5 2		2	28		5	- 1
	AKISTAN ARAGUAY							1	1		5							- 4
	RU							4	2		2	3	2					- 1
	HILIPPINES												6	6				- 1
	DLAND							11			5	11	1	8 14	52			- 1
	DRTUGAL UMANIA							3 14	}		2			3	8		1	
	OUTH AFRICA										2	6						
	PAIN				1			8	1		19	8	6	2	3	6		- 1
	VEDEN							22	î		8 5	12 13	5	2 23	39 50	1	10	
	HAILAND										-	5	,	14			2	
	JRKEY							10			8		9	6		1	6	
	A.R.						_	9			6	3	3		47	_		
	NITED KINGDOM		3	2	2		3	42	5	6	16	65 3		4	7	1	6	
	RUGUAY S.A.	11	23	2	20	2	70	137	37	35	350	299	10	100	14	15		7
	S.S.R.						40	340	20		110	100		300	450			- 1
	NEZUELA							2			3	6	,	12	,,			
	ETNAM JGOSLAVIA							4			3	3	5	2	100	1	3	

TABLE SHOWING THE NUMERICAL STRENGTH OF EACH COUNTRY

phi- us ce	Ocean Mines- weepers, Fleet Mines-		Inshore Mines- weepers, Mines- weeping	River Gun-	Motor Laun- ches, Small Patrol	Land- ing	Land- ing	Boom Defence Ves- sels, Net-	Survey	Depot Ships, Repair Ships, Mainte- nance	Trans-	Supply		Train- ing		Miscela-	
gship	weepers	Hunters	Boots	boats	Craft	Ships	Craft	layers	Ships	Ships	ports	Ships	Oilers	Ships	Tugs	neous	
	4					7	3		3	1	5		4	2	10	2	ARGE NTINA
		6			3			3	2				1		3	9	AUSTRALIA
	7	23	16		7					3					1	8	BELGIUM
		4		8	3		.,		6	2	4		10	1 2	12	2 2	BRAZIL BULGARIA
	2	4	24	21	13		16 8				1			_	'	2	BURMA
	•	6		-1	3			5	5	3		3	2		27	70	CANADA
					9				,				ļ	ł	1	1	CEYLON
						3	3		1		2		1	1	12	3	CHILE
	12	28		13	61	31	28	6	2	1	1	8	5	2	11	380	CHINA
				5	18 27				1		6		3	ŀ	13 I	6	COLOMBIA CUBA
		8	16		13		10		1	3			2		'	7	DENMARK
					7	1	2	İ					2		5	2	DOMINICAN R
					8	2	}					İ			2	2	ECUADOR
			5		14						9	l	,,	,	3	9	FINLAND
	15 22	71	15 87		13 93	9	10 20	12	8	10	10	16	10	4 2	20	30 30	FRANCE GERMANY (E)
	22	24	45		24	6	4		8	16		6	10	3	18	20	GERMANY (W)
	5	14			5	15	8	1	2	2		1	7		14	10	GREECE
		4	2		13	1	1		4	1			3		ī	10	INDIA
	6	15			82	11	6		2	3	4		4	2	5	5	INDONESIA
		4	2		24		3			1			2		1	2	IRAN
					5		3								'	2 2	IRAQ ISRAEL
	4	52	20				23	2	2	1	5		2	4	26	90	ITALY
		41	6		32	4	6			3			2	10	3	160	JAPAN
	10		20		3]		70	KOREA (N)
		11	1			20		Į		1	1	6	4	ĺ	2	6 2	KOREA (S) MALAYSIA
		6	6		14		1		ı	1	1		2			1 1	MEXICO
		46	16		8 5		7	1	3	1		3	1	3	7	20	NETHERLANDS
	4'		, ,		12				1			1				2	NEW ZEALAND
		10							1	2				1		9	NORWAY
		8			6				1				2		4	3	PAKISTAN PARAGUAY
		2		3	5 9	4					3		4		2	3	PERU
		2			20	6			1	1	1		1		4	5	PHILIPPINES
	18	4			17		17		1				3	2		9	POLAND
,	4	12	-		35		4		6			1	2	1		11	PORTUGAL
	4		22					.		1				1		2 2	RUMANIA
	12	10		ī	10			1	3		3		1 4	1	10	20	SOUTH AFRICA SPAIN
	13 6	18	19	'	17 24	8	12	'	12	2	٥	1	3	2	"	17	SWEDEN
	5	8	"		50	45	38		2	3	6		5		5	60	TAIWAN
	1	4			8	5	8		1		1		4	1	5	3	THAILAND
	9	12			30			5		2	_		4	1	2	5	TURKEY
	6	6	3		3 17	7	19	24	,,	.,	1	30	40		70	2	†U.A.R. UNITED KINGDOM
		79	,		''	′	7	26	12	11		20	40 1		/"	100	URUGUAY
5	120	32	50	1	100*	135	125	2	20	60	40	100	70	2	140*	300*	*U.S.A.
	170	110	20	20	100	124	106	18	55	50	25	20	50	20	40	500	§U.S.S.R.
				}	12	4			3	1	1				2	3	VENEZUELA
		3				18	7				_	1	2		14	10	VIETNAM
	}	4	30	1	16	I	7	1	I	l	2	I	6	1	8	20	YUGOSLAVIA

ADDENDA



RESOLUTION (United Kingdom, new Polaris armed nuclear powered submarine, page 278)

1966, Official

CANADA **Submarines**

Page 35
Okanagan launched on 17 Sep. 1966 at H.M. Dock-yard, Chatham.

CEYLON Patrol Boats

Page 48. Seven short patrol boats ordered from Thornycroft (Malaysia) Ltd., Singapore, for the Royal Ceylon Navy.

CHINA **Frigates**

Page 54.

A new class of escort vessel is reported to have been built at Kiangnan Yard, Shanghai, and fitted out in 1966, 1,800 tons full load displacement, 298×33½ feet, three 3.9-inch, 56 cal. dual mounts, 1 for'd, 2 aft, light tripod mast. Pennant No. 209.

IRAN **Frigates**

Page 138.
Ships ordered from Vosper Limited, Portsmouth, which Iran refers to as "destroyers" are of the Vosper Mark 5 frigate design (improved and considerably enlarged corvette type). The adjacent artist's impression, while not depicting the exact design of ships Iran is having, has been provided by the builders as being quite sufficiently like it to give_readers a good general idea.

JAPAN Destroyers

Page 160.
7 New Construction. Diesel Type. "Cloud" Class:—
Yamagumo completed. Adjacent photograph shows the ship on builders' trials.

NETHERLANDS Frigates

Page 188.
6 New Construction, "Van Speijk" Class:— Prototype Van Speijk completed. Adjacent photograph shows the ship on trials.

POLAND Fleet Minesweepers

Page 216.
Adjacent photograph shows fastrzab when she visited Helsinki with Orlik.

SOUTH AFRICA Fleet Replenishment Ship

Page 230

TAFELBERG (Table Mountain). Built as Danish East Asiatic Co.'s tanker Annam by Nakskovs Skibsvaerf. Launched on 20 June 1958. Purchased by the South African Navy in 1965. 12,500 tons gross, 18,430 tons deadweight. Speed 15½ kmots. Being rebuilt by Barens Shipbuilding and Engineering Co., Durban with extra accommodation (crew as tanker about 40, complement as naval vessel about 100 in peacetime), air conditioning, much re-wiring for additional equipment, new upper RAS (replenishment at sea) deck being built to contain gantries, re-fuelling pipes,, etc. May be equipped with helicopters.

U.S.S.R.

U.S.S.R.

Submarines Page 432.

Programme:—Latest reports give 40 nuclear powered submarines operational of which 28 carry missiles.

Target:—60 nuclear powered submarines, i.e. a further 20 to be built. Strength:—Effective conventionally powered submarine fleet (excluding training boats and obsolencent vessels) being maintained at 340 units.



Vosper Mark 5 design (Iran, new frigate, page 138)

1966, courtesy Vosper Limited



YAMAGUMO (Japan, new destroyer on builders' trials, page 160

1966, Mitsui



VAN SPEIJK (Netherlands, new frigate on trials, page 188)

1966, Official



JASTRZAB (Poland, minesweeper, page 216)

1966, col. Borg

GENERAL INDEX

(Named Ships only)

Abbreviations in () following the name of the ship indicates the country

A1 A	Albania Argentine	Et G	Ethiopia Gaboon	L Le	Laos Lebanon	S.A. Sau	South Africa Saudi Arabia
R.A.N.	Australia	Ger	West Germany	Li	Liberia	Sen	Senegal
В	Belgium	GE	East Germany	Lib	Libya	S.L.	Sierra Leone
Br	Brazil	Gh	Ghana	Ma	Madagascar	Som	Somalia
Bul	Bulgaria	Gr	Greece	M	Malaya	Sp	Spain
Bur	Burma	Gu	Guatemala	Mal	Mali	Sw	Sweden
Ca	Cambodia	Gui	Guinea	Mex	Mexico	Su	Sudan
Cam	Cameroon	H.K.	Hong Kong	Mor	Morocco	Sy T.C.	Syria
R.C.N.	Canada	Hon	Honduras	N	Netherlands	T.C.	Taiwan China
Chi	Chile	Hun	Hungary	R.N.Z.	New Zealand	Th	Thailand
C	China	I.C.	Ivory Coast	Nic	Nicaragua	To	Togo
Co	Congo	Ice	lceland	Nig	Nigeria	Tu	Tunisia
Col	Colombia	In	India	Nor	Norway	Τ	Turkey
C.R.	Costa Rica	Ind	Indonesia	Pa	Pakistan	U.K.	United Kingdom
Си	Cuba	lr	Iran	Pan	Panama	U.S.A.	United States of America
D	Denmark	Ira	Iraq	Par	Paraguay	Rus	U.S.S.R.
Dom	Dominican	ls	Israel	P	Peru	Ven	Venezuela
EΑ	East Africa	ł	ltaly	Ph	Philippines	V.M.	Viet Minh
Ec	Ecuador	J	Japan	Po	Poland	V	Vietnam
Eg	Egypt	K.N.	Korea North	Por	Portuga!	Υ	Yugoslavia
Ei	Eire	Ke	Kenya	R.	Rumania	Z	Zanzibar
ES	El Salvador	Kor	Korea				

AACHEN-AMVRAKIA

	Page		Page	Page	Page
_	0-	. (1)	100		
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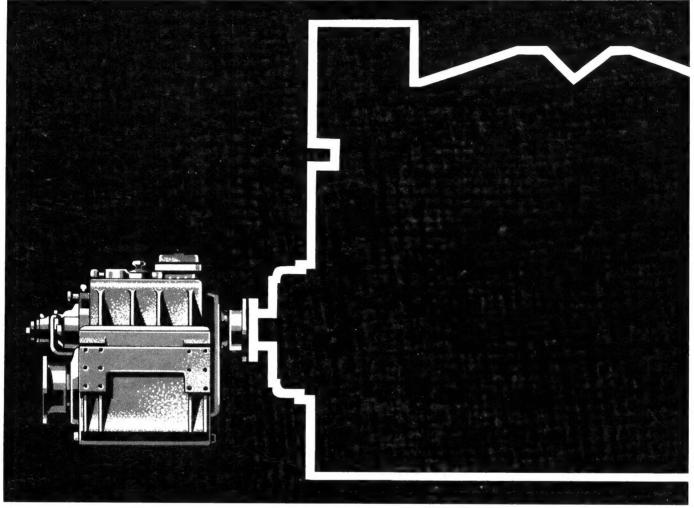
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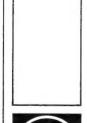
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